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## ORIGINAL ARTICLES.

### PRURITUS ANI.<sup>1</sup>

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THE term pruritus ani has for the scientific physician only a vague significance, but for its victims it is portentous with evil. To the former it means an indefinite symptom referable to divers and sundry pathological causes, sometimes to none, but to the patient it means an agony besides which pain would be pleasure.

The disease is marked by itching of greater or less degree about the anus. Its severity is governed largely by the nervous condition of the patient. I do not mean by this that it is worse in hyperesthetic individuals, but on the contrary it is generally so in cases of dysesthesia or hypopselaphesia, patients who bear pain well and whose sensations of touch are below normal. Some are only annoyed slightly after exercise or overheating and are relieved by almost any application to the parts; in others the itching is so acute and exacting that they must scratch under whatever circumstances and thus they are debarred from society lest their infirmity cause offense. Some patients never suffer in the day-time but as soon as they are in bed and just about to fall asleep the attacks come on and continue until morning. These are the most distressing cases and the most severe. With them it is more than an itching; it is a stinging, burning, aggravating pain which scratching does not relieve, and to which applications of water, hot enough to blister, are absolutely pleasant. It seems just within the anus but when the patient introduces the finger or pile pipe to relieve it, the sensation always recedes to just above the point of touch. Sleep is impossible until the patient, worn and exhausted from the vigil, dozes off about dawn and awakes after a few hours rested somewhat but not refreshed. They get through the day fairly comfortably so far as the itching is concerned but dreading the return of night and its inevitable suffering. The wan and exhausted look upon the faces of chronic sufferers from pruritus resembles much that of the morphine habitué who has been deprived of his only solace and the desperate frame of mind which develops is alarming to the friends and physician. I have never known a case of suicide from this cause but having heard it threatened so often I can not but believe that some men have taken their lives rather than continue in their torture. The

disease is generally more or less chronic when the rectal specialist sees it, as it begins insidiously; the suffering is not great at first and careful examination of the parts by touch and the mirror reveals nothing abnormal to the patient. He takes it as a sort of joke at first and speaks lightly and in contempt of it. It reminded one of his first night on our great western prairies. When the camp fires had died down and he had just dropped to sleep the noise of a thousand howling wolves began. He awoke with horror and lay all night with gun in hand expecting surely to be devoured, but determined to sell his life as dearly as possible. But when the morning came all that he could see of this ravaging pack was one poor lone coyote perched upon his earth hill and grinning from ear to ear. He expected after such a night of torture to find his anus in a terrible condition and was provoked to think he could suffer so much and have nothing to show for it.

Sudden changes of temperature, especially from cold to heat, aggravate the itching, as may also a change of climate as from inland to seashore. I have one patient who claims that he is always worse when near salt water. This statement must be taken *cum grano salis*, however, as his diet and habits are different there and at home. The itching may be subdued for quite a time and relighted by some article of diet or drink. Each case presents a problem in itself as to idiosyncrasies. The physical symptoms are very slight in the early stages of the disease, but after it has existed for a period they become more or less marked according to the etiological cause. I am not a believer in *pruritus ani essentialis*. The constitutional condition upon which the theory of this disease is founded I admit, and reckon it an important element; but I insist that there is always an exciting cause for the disturbance, and upon this cause will depend the physical appearance of the parts. If we discuss pruritus ani as a disease *per se* we must go into a description of all the various conditions which produce itching of the anus, such, for example, as eczema, moist, dry and marginatum, herpes, pediculi, erythema, fissure, prolapsus recti, hemorrhoids, urethral stricture, etc., etc. On the other hand, if we consider it simply a symptom or complication of these affections, as it really is, then it should be treated of under those diseases and our subject will have been annihilated, unless we evolve from our imagination a pruritus ani essentialis—a disease without a pathology, an effect without a cause. We are thus between the horns of a dilemma and it is somewhat difficult to extricate ourselves. It is the purpose of this paper to discuss those so-called cases of essential pruritus

<sup>1</sup>Read before the American Proctologic Society, Columbus, O., June, 1899.

and evolve a little structure from the chaotic opinions concerning it. Those who speak of it as such, or as neuralgia, or as an affection, reflex or direct, of the lower end of the spinal cord, are logically led to the description of the physical condition of the parts as a result of the disease itself. They speak of the excoriation, the moist secretion, the dry scaly appearance, the hypertrophied mucous folds, the fissured mucocutaneous border and the depigmentation of the parts as the results of pruritus ani. It is true that the pruritus exists before these conditions are observable to the naked eye, but it is equally true that the itching is never very severe until one of these pathological conditions has developed. Such pathological changes may be well within the margin of the anus and hidden from the careless observer, but some morbid condition is always there when the pruritus is marked. The diseases which cause these physical changes in the parts we know full well, and these diseases occurring in the dysesthesic or hypopselaphesic patient, instead of causing pain, produce itching until the scratching and irritation of the parts develop actual pain. I propose to discuss these diseases and their influence in the production of pruritus in this paper and this leads us to the etiology of the disease.

**Etiology.**—I can but enumerate the many causes of pruritus ani as laid down by different authors. A discussion of them would involve the whole subject of rectal diseases. As an etiological factor many of them are problematical, but as most of them are patent to the most casual observer they should always be removed if possible in the course of treatment for pruritus. They are: Oxyuris vermicularis, constipation, impacted feces, hemorrhoids, fissure in ano, fistula in ano, ulceration of rectum or anus, neoplasms of the rectum, pediculi, parasites, erythema, eczema of various kinds, diseases of the crypts, herpes, stricture of the urethra, stone in the bladder, foreign bodies in the rectum, pregnancy, leucorrhea, gonorrhea, hepatitis, nephritis, neuralgia, diseases of the spinal cord and brain, rheumatism, uricemia, catarrhal diseases of the rectum, sigmoiditis, and colitis.

I have so frequently seen piles removed, fistulae and fissures cured, pregnancy terminated, hepatic diseases get well, etc., and yet the pruritus remain that I have grown skeptical of most of them as etiological factors. In the last five causes, however, together with parasites and oxyurides, I have developed the most profound faith. As to the oxyurides little need be said at the present time. Their influence, the symptoms which they produce, and the methods of determining their presence are too familiar to be repeated.

Parasitic diseases are of more importance and require careful macroscopic and microscopic observation to determine their presence. Those which may give rise to pruritus are erythrasma, the various tinea, scabies and pediculi. It requires somewhat of a dermatological training to be able to diagnose and properly treat these diseases, and to those not trained in this branch of medicine the services of a specialist are of the utmost

importance in doubtful and obstinate cases. When this form of disease exists we may run the whole gamut of parasitocides before we relieve our patients unless an accurate diagnosis is made at first. I must refer my readers to special works on dermatology for the study of this part of our subject, but I would urge a constant appreciation of the fact that these little animal and vegetable growths may be the exciting causes of the most intractable and severe pruritus. Moreover it must be borne in mind that the irritation produced by their presence and the consequent scratching may produce pathological changes in the parts identical with those produced by other diseases and thus a complication will arise demanding a combined therapeutic management.

Rheumatism and uricemia, if not identical, are intimately associated in the human economy. Gastro-intestinal, particularly colonic, fermentation is a most important element in both. It is often difficult to distinguish between rheumatic and lithic acid diatheses. Happily the same treatment is effectual in both. For some years past I have believed that these two conditions are potent causes in the production of pruritus ani, and the more I see and observe cases the more am I convinced of the constitutional element in their production. A large majority of my pruritus patients have suffered more or less from rheumatism or uricemic symptoms. The urine of these patients is generally loaded with uric acid or its derivatives and their distress is almost invariably in direct proportion to this condition. Errors or excesses in diet which produce increase of uric acid or intestinal fermentation are more than likely to bring on exaggerated attacks of pruritus, and when the constitutional derangement has been relieved the pruritus just as promptly subsides. I recall one case in which the indulgence in sweet wines, pastry, or excess of carbohydrate foods would bring on congestion, redness and itching about the anus in a few hours, and if the condition was not soon remedied this irritation, swelling and redness would spread like a prairie fire to the buttocks, scrotum, abdomen, and even to the face. But with all its dissemination the pruritus was the one constant and unbearable symptom. I could relate many similar cases, although perhaps less severe, but in all of them the same constitutional element existed and under proper treatment they recovered, whereas all the local applications in creation would have given temporary relief alone. Do not understand me to belittle local applications. They are our sheet anchors of success in that they relieve our patients' suffering while we treat the disease, but they are too often vaunted as specifics and alone depended on in the treatment of pruritus ani. The constitutional element in producing pruritus is an important fact and the more we recognize it the greater will be our success in treatment.

Catarrhal diseases of the anus, rectum, sigmoid and colon are the processes referred to when I said above that we knew the causes of the pathological changes about the anus in pruritus ani. We

may discuss them together in relation to pruritus, although membranous colitis and sigmoiditis are distinct in their symptomatology. There are practically three kinds of this disease; the acute, the atrophic and the hypertrophic catarrh. The two latter may result from the first but, in general, patients with the chronic forms give a very indistinct history of having had the acute variety. I have discussed these diseases elsewhere in print and shall only here recall the physical changes which they produce and compare them with those found in pruritus ani. Before doing this, however, let me say that those who claim the severe and chronic types of pruritus ani to be without physical or pathological changes have certainly seen very few cases or have observed them superficially. All the chronic cases I have seen have presented very marked changes about the anus and this statement agrees with the opinion of Allingham and other noted specialists.

In the acute catarrh of the rectum there is very little manifestation of disease about the anus, until the secretive or suppurative stage begins. If this continues for a time the skin and mucocutaneous surfaces become moist, sodden, sometimes excoriated and inflamed, taking on the nature of a superficial cellulitis. The disease does not often assume such a serious phase and when it does pruritus is not so marked as actual pain. In the milder form heat, heaviness, aching in the sacrum and mild itching in the anus are its symptoms.

In the hypertrophic catarrh and membranous colitis the pathological condition with which we have to deal is hypertrophy of the mucous membrane and Lieberkuhn's follicles, attended with hypersecretion, exfoliation of the epithelium and septic infection. Perhaps the infection might be placed first. Pruritus is a symptom early in this disease and becomes more and more marked as the disease process approaches the sensitive margin of the anus and as the acrid secretions flow over, irritate and infect the parts. The appearance of the skin about the anus in the chronic state of this disease is moist, white, sodden, like a washerwoman's hands. The mucous membrane is swollen and edematous, the rugæ are more marked and the mucous folds hypertrophied. After some time the irritation, scratching and chafing of the parts develops an erythema, excoriation, or even ulceration. Together with these changes and the exfoliation of the epithelium of the skin comes the depigmentation of the parts, an appearance on which Allingham lays so much stress in pruritus. These are the changes in a greater or less degree which we find in many of our most annoying cases of pruritus and the reason they do not recover is that we treat them from below instead of from above where the root of the evil is.

The atrophic catarrh is exactly the opposite of the above. The glands are atrophied, the secretions deficient, the surfaces hot and dry and without normal lubrication. In consequence the stools are constipated, hard and lumpy, and the sphincter is generally contracted. The disease extends to the mucocutaneous border and this area be-

comes so dry and brittle that any distention of the parts by the feces or pulling apart of the buttocks causes numerous little cracks or fissures which are irritated by the touch of clothing or passing feces and thus set up the most intolerable itching. I have frequently produced these little cracks and set up the pruritus when showing the condition to my classes. These little fissures often run or begin well up above the anal margin and may develop into true fissures. They are easily overlooked and I truly believe that these are the nerve-wrecking cases in which so many observers say there is no pathological change or cause. There may be no change on the outside but just within the anus or even higher up the cause is almost surely to be found. These pathological changes are the ones which I have found most often in obstinate and obscure cases sent to me, and they tally remarkably with descriptions of pruritus ani by our best authors.

Aside from cases due to the specific causes mentioned above I believe all the cases of severe pruritus ani may be traced to one or the other of these conditions of rheumatic, uricemic, or catarrhal disease, and furthermore the proof of it lies in the fact that patients get well when treated in accordance with this pathogeny. But one will ask why, then, is it so much worse at night? I answer, for many reasons. Patients generally go to stool, bathe, rub, or scratch themselves before going to bed; heat or change of temperature always makes superficial irritation worse; the recumbent position brings the parts closer together; and the influence of night and quiet on the mind, making all the senses more acute, serves to make the patient more sensitive to the irritation.

*Treatment.*—For the scientific physician all treatment must be based upon his conception of the pathology of the case. To those who have followed me in this discussion I need say very little on this part of the subject. Remove the pathological or reflex cause, treat the disease and not the symptom. Pruritus ani is only a symptom. If operations are necessary to remove what you believe to be the cause, do them, but be careful in your prognoses as to permanent relief. Fissure, fistula, hemorrhoids, condylomata, may all be due to the same disease which causes the pruritus and they may be removed and yet the pruritus remain. As to the rheumatic and uricemic cases the textbooks upon general medicine are safe guides in treatment. Nitrogenous diet, alkaline diuretics, salicylic compounds and hot baths compose the general routine of my treatment. The management of catarrhal diseases I have described in *Mathews Medical Quarterly*, 1894, and in the *New York Medical Journal*, 1898. I wish here to express my increasing faith in the use of the modified Kelly tubes, the long Wales bougies, the aqueous fluid extract of krameria and the strong solutions of argonine.

In the local treatment we have our means of relief while radical cure is being attained. Judgment and experience alone can guide us in the selection of a remedy. If our patients would bear



with us long enough we would all find a remedy to relieve them by trying one after another of those recommended in the text-books. But it taxes our ingenuity to apply the right one at first. Some need stimulation, some need soothing. Hot water is generally acceptable, but sometimes cold is more so. Carbolic solutions, larkspur, black-wash, salicylic acid, chloral hydrate, chloride of chalk, extract of conium, extract of stramonium, camphor, cocaine, tar, etc., etc., may all be of use in one form or another. I have learned largely to rely on a combination of carbolic acid, ten to twenty per cent., salicylic acid, two to ten per cent., boric acid, five per cent., glycerine or cold cream, ad. one hundred per cent. I have used ichthyol with great benefit and when there is pain at stool, conium and cocaine have rendered me much service. Since I have treated pruritus on the pathological theory detailed above for the past five or six years, I have not failed of complete and more or less permanent relief in any case. I have not found it necessary to curette the parts, apply the actual cautery, or still less to resort to the radical operation of dissecting away the parts that itch. I would say the diseased area but this would involve too much according to my theory. Having determined the type and variety of the disease producing pruritus, it is not difficult to manage, and in most cases we may confidently expect a radical cure.

#### THE GREAT DRAINAGE CANAL AT CHICAGO.

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PUBLIC attention has been called to the colossal enterprise in which Chicago has been engaged for the disposal of its sewage by the fact that the great construction is now completed. The water was permitted to flow through the sluice-gates of the great controlling works at Lockport, Ill., on January 17, and the canal was thus formally and officially opened.

The character and importance of this great sanitary enterprise are not fully apprehended. It is not a canal with locks to regulate the flow of water, but an open channel 160 feet wide at the bottom and 38 feet deep. The construction was begun in 1892. It has cost about \$33,000,000 to date. Its purpose is to unite the south branch of the Chicago river to the Desplaines at Lockport, Ill., whence it will flow to the Mississippi river. All the sewage now emptying into Lake Michigan is to be intercepted. It will then be turned into the Chicago river. With it will pass a volume of 20,000 cubic feet of water from the lake. This will assist in producing a current. It will also dilute the sewage.

When first opened the canal is to discharge 10,000 cubic feet of water per second, which is about 5 per cent. of the amount now flowing through the Niagara river. The quantity of water to be discharged is to be fixed by the state legislature. This is done with a view to protecting the valley of the Illinois from contamination.

When the population of Chicago shall exceed three millions, the quantity of the discharge is to be increased proportionately. The amount of the original outflow is very great. The engineers estimate that it will raise the low-water mark of the Mississippi one foot at St. Louis.

The contention on which some of the opposition which has arisen has been based, is that the Chicago river is inadequate to furnish the required amount of water with the velocity of current fixed by the Drainage Board. The objection is naturally not supported by the bold engineers of the undertaking. The achievement of such an immense enterprise, it is claimed, is made entirely feasible by the peculiar geography of the great lakes. While Michigan and Huron are practically on the same plane—about 580 feet above the sea—Lake Erie is only about 8 feet lower, and Lake Superior poses as an independent basin 20 feet above its sister-lakes. It is asserted by a high scientific authority that the basin of the lower three of the lakes is so delicately poised that only four feet of rock and two of gravel at Chicago prevent them from spilling over into the Mississippi Valley at high water. The rock bottom of the Niagara where it leaves Lake Erie is only 30 feet lower than the rock shelf which forms the barrier west of Chicago. It seems that there is an old glacial outlet into the Mississippi Valley, into which the drainage canal will now turn a portion of the water of the great lakes southward. The Chicago engineers appear, then, simply to be carrying out at great expense of time and labor an unutilized topographical plan. Nature herself seems to have had such an outlet in mind.

The peculiarly bold aspect of the scheme is seen in the fact that the promoters did not deem it necessary or even advisable to get the consent to their project of other parties whose interests might be affected by it. The whole enterprise has consequently been a radiantly litigious one from the beginning.

The channel's depth, as has been stated, is 38 feet. This gives a capacity for a depth of water of from 25 to 35 feet. The current will have a speed of one and one-fifth miles per hour. Either 300,000 or 600,000 cubic feet of water can be carried through it per minute. Experts have declared that this will permanently lower the level of the three lower lakes from 3 to 8 inches and cause a corresponding reduction of from 240 to 700 tons in the carrying capacity for the large vessels of the lakes. The question of the lowering of the lake level is undoubtedly an important one. A feasible remedy has been proposed, however. It involves the storing of water in Lake Superior and letting it down when needed. The present shallowness of all the Lake Erie harbors has made necessary the work of deepening the navigable channel two feet by the government in recent years, at a cost of two million dollars.

The inland cities south of Chicago, too, are naturally concerned as to the effect of the Chi-



ago discharge on the Illinois river. The question of overflow has become an interesting one to dwellers along the river-banks.

Four results have been tabulated as the ends to be gained from the opening of the canal, *viz.*, (1) Protection of Chicago's water-supply from pollution; (2) purification of the Chicago river and its branches; (3) discharge of flood-waters without overflow; (4) disposal of all the sewage of Chicago without detriment to other communities. The first three points are conceded to have been achieved; but the fourth one has been of vital interest to the people of St. Louis. This is not surprising, since the discharge of the sewage of Chicago by the canal means a delivery into the Mississippi, from whence St. Louis draws its water-supply, at a point only forty-five miles above the city. This opposition culminated in a report by an investigating committee, which implied that Chicago is bound to purify the sewage before casting it upon the waters to contaminate the water-supply of a neighboring city. The report went so far as to urge that by the general laws of the United States, the pollution of interstate streams must be stopped, and that state and municipal regulations will demand the purification of public water-supplies under suspicion. A purification plant in connection with the Chicago works would cost about fifty million dollars, and three million dollars each year for maintenance; to construct which, it is pointed out, is asking a good deal even of Chicago. In view of the present condition of St. Louis' drinking water, which is a murky and opaque beverage trustingly imbibed by the masses, it might seem pertinent on the part of Chicago to make the counter suggestion that, in its own interests as well as that of a neighboring city, St. Louis should install a filtration plant.

The fact that any gigantic cesspool, such as the Chicago river virtually constituted, is a menace not only to the health of the immediate community but also, by the laws of infection, its dangers are constantly being scattered far and wide, ought to facilitate any attempt to abolish it. Very little would be left of Chicago sewage by the time it reached St. Louis. The processes of dilution and evaporation have a distance of three hundred miles in which to perform their beneficent work. The scheme of the drainage canal, it is to be kept in mind, has a wider importance and significance than a purely local sanitary expedient. In its broadest conception, it assumes the dignity and power of a wide commercial enterprise in furnishing a navigable waterway which will not only satisfactorily dispose of all the water and waste of Chicago and all the cities along its banks, but also permit vessels to come down through it from Lake Michigan to the Gulf of Mexico. The Chicago engineers have foreseen the feasibility of diverting 15 or 20 per cent. of the water of the great lakes into the Illinois river, with locks to carry ships past the rapids that would be created. The legislature of Illinois, it seems, four years ago declared in favor of

the construction of a trunk waterway through the State of such dimensions and capacity as to form a homogeneous part of a through route from the Atlantic seaboard to the Gulf of Mexico. The whole enterprise, it is seen, is surpassing in boldness. The drainage canal thus becomes the chief factor in a scheme for the improvement of internal navigation practically without precedent.

This is a plan not without interest to the people generally. And it is pleasant to think that while New York, Philadelphia and Boston have to pay enormous sums for pure water, Chicago is to have an abundant supply by simply pumping it through the mains from the big blue lake at its door.

# **EXPERIMENTAL RESEARCHES ON THE EFFECTS OF INCREASED BAROMETRIC PRESSURE AND OF FOREIGN BODIES IN THE PHARYNX, ESOPHAGUS, TRACHEA AND LARYNX.**

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## **I. EFFECTS OF INCREASED BAROMETRIC PRESSURE.**

*Methods of Research.*—The animals were all reduced to full surgical anesthesia by ether before the experiments were begun and were killed before recovery from it. Respiratory tracings were obtained by means of a rubber tambour, attached to a canvas band, encircling three-fourths of the circumference of the animal's chest. This energized a writing-style attached to an organ-key mechanism. Respiratory tracings were obtained very accurately. Blood pressure was recorded by means of a mercury manometer. The drums were revolved by a mechanism so made as to be capable of a variety of movements, ranging from one revolution in thirty minutes to eighteen revolutions per minute, so that any phase of any given tracing might be duly recorded. The following is a part of a rather extended research which enable us to estimate the reliable reduction with comparatively few experiments.

*Preliminary Remarks.*—On entering an atmosphere of increased barometric pressure most persons experience some peculiar symptoms, such as oppression, dizziness, occasional fainting, difficult breathing, very rapid pulse, etc. The phenomena observed in drowning suggested that some light might be thrown on the subject by experiments made along similar lines.

*Protocols.*—The following technic was employed in the experiments: The animals were placed under full surgical anesthesia, the trachea dissected out, and a cannula tied firmly into it; a heavy tubing was then tied on the cannula, and this was connected with a strong leather bellows, from which a large quantity of air might be suddenly or slowly driven into the lungs—that is to

say, the intrabronchopulmonary pressure might be increased, as would be the case in increased barometric pressure. The blood pressure was taken in the carotid artery. The respirations were neglected, as they could express nothing in such experiments.

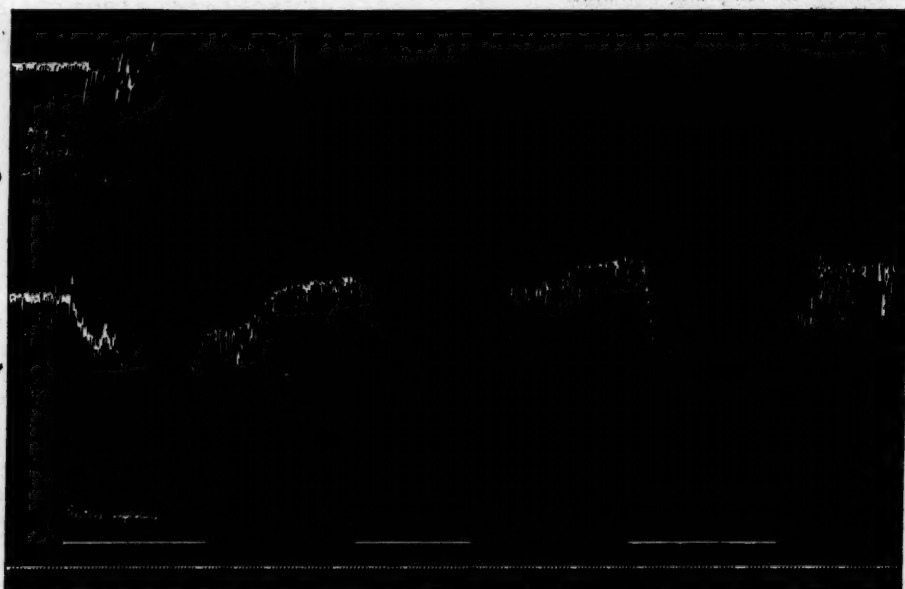
1. A fox terrier, weighing twenty pounds, in good condition, with an initial blood pressure of one hundred and forty-six millimeters, was subjected to the experiments as outlined. The bellows was suddenly emptied into the pulmonary tract of the dog, producing a very great immediate fall in the blood-pressure. The rubber tubing at the close of the injection of the air was clamped, the bellows refilled; then, again as the air was passing into the tube, it was unclamped, and more air forced into the lungs. In this man-

autopsy revealed conditions similar to those observed in the preceding case.

3. A bulldog, weighing forty pounds, was subjected to an experiment similar to the preceding, with practically the same results. The animal was killed almost instantly. Observations at the autopsy were similar to the preceding.

4. In a strong shepherd dog a control was made by several vigorous blasts from the bellows, producing collapse in the blood-pressure. The air was immediately allowed to escape, and the blood-pressure mounted up again to a point previously occupied. Then, passing a scalpel between the ribs and severing the descending vena cava, the blood gushed in torrents out of this vessel. The blood-pressure sank, but it sank more gradually than in the case of increased intrapulmonary pres-

Fig. 7.



Positive inflation of the lungs increasing the trachea-pulmonary pressure by means of a bellows.—Note the momentary rise in the blood-pressure, followed by an immediate staggering fall. The lower line indicates seconds.

ner the blood-pressure fell abruptly to the abscissa line. The animal was killed almost instantly thereby. An immediate autopsy showed the right heart to be engorged, the left heart empty.

2. A spaniel, weighing twenty-four pounds was subjected to an experiment similar to the preceding; the blood-pressure suffered a staggering fall, as before. In this instant the pressure at the first blast dropped almost to the abscissa line. On removing the clip and allowing the air to escape from the lungs, the blood-pressure leaped up very rapidly, and soon regained its normal height. This was several times repeated, so that there could be no doubt as to the striking effect of an increased intrathoracic pressure upon the circulation. The animal was then killed by again increasing the intrathoracic pressure so as to block the circulation through the lungs. The

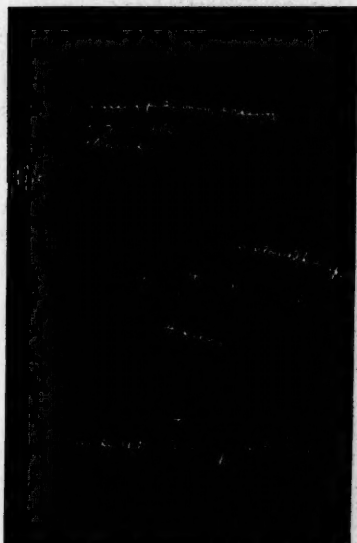
sure produced immediately before by the injection of the air.

5. A large St. Bernard was subjected to the same treatment as in the foregoing case. After producing the collapse in the blood-pressure by forcing air into the lungs and then allowing the blood-pressure to recover itself, the inferior vena cava was severed and the blood permitted to gush forth freely. A great fall in blood-pressure was produced, but this fall was not so sudden nor was the collapse so marked as in the experiment in forcing in air.

*Summary of Experimental Evidence.*—The evidence of these experiments and of the experiments on drowning tends to show that a sufficient increase in the intrapulmonary pressure may produce a collapse of the circulation. It robs the left heart directly of blood, and, therefore, causes a

greater collapse than can be produced by severing either the superior or the inferior vena cava alone. Now, as a workman enters a tunnel under high barometric pressure the respiratory tract is subjected to an increase in pressure, and the immediate symptoms may be interpreted from this main

Fig. 2.



fact. Read from left to right. The white lines below the blood-pressure indicate the length of time of the application of the force. The lower line indicates seconds. The fall in the blood-pressure was caused by forcing air into the trachea by means of a bellows. In each succeeding experiment the air was forced in more suddenly. Note the quick recovery in each instance when the bellows was released. The curves could be varied at will by applying varying degrees of force in the inflation.

The dizziness, the difficult breathing, the soft, rapid pulse, all would be produced by a great fall in the blood-pressure. The respiratory symptoms may be produced by a sudden fall in the blood-pressure as well as diminished circulation of the blood, thereby diminishing the exchange of gas in the lungs, which, in itself, is sufficient to cause an increased respiratory action and produce the respiratory distress.

## II. FOREIGN BODIES IN THE PHARYNX AND ESOPHAGUS.

*Preliminary Remarks.*—The symptoms produced by foreign bodies of considerable size lodged in the pharynx and certain portions of the esophagus bear a close resemblance to those occasioned by the presence of foreign bodies in certain parts of the respiratory tract. Among the symptoms of choking may be mentioned cyanosis, asphyxia, collapse and slow pulse. These symptoms so closely resemble those produced by foreign bodies in the larynx that the one condition has been frequently mistaken for the other, and in

many cases the differential diagnosis from the subjective symptoms alone has been quite impossible.

The following research was undertaken to attempt an explanation of these phenomena:

*Protocols.*—1. On a mongrel dog, weighing twenty-eight pounds, whose blood-pressure registered one hundred and thirty-four millimeters, under anesthesia, the following experiments were performed: (a) The esophagus was exposed by careful dissection, so as to avoid severing any of the nerves. This was then opened by a longitudinal slit in its middle, and the portions immediately above and below the slit were subjected to dilatation by means of a large bulb and also with a uterine dilator. Although the dilatation was forcible no effect upon blood-pressure was produced. It is doubtful whether the slight slowing of the respiration was a coincidence or an effect. (b) Then passing the instruments down to a point opposite the bifurcation of the trachea and producing there a similar dilatation, like observations were made. (c) The instruments were passed upward to a point opposite the larynx and dilatation was made; there was a slight rise in blood-pressure

Fig. 3.



Experiment on choking, by pressing a globular foreign body into the esophagus opposite the larynx.—Note the temporary inhibition of the respiration (upper tracing) and the staggering fall in the blood pressure (second tracing).

and a temporary arrest in respiration occurred, this temporary arrest being followed by slow respiratory efforts during the remainder of the dilatation. (d) The same experiments were repeated with similar results. Then passing the dilator down to the cardiac orifice of the esophagus and



dilating this tube, there was produced a slight fall of blood-pressure, and the respirations were diminished in frequency. (e) On introducing from below upward the rounded handle of an instrument larger than the opening into the pharynx, producing thereby as great a dilatation as possible of the upper portion of the esophagus, there followed a very marked fall in blood-pressure, and the character of the heart beats displayed the distinct effect of "vagal" action. The respirations at the same time were very much slowed. The middle portion of the esophagus was then again dilated with as much force as possible, resulting in a slight irregularity of respiration with an unchanged blood-pressure curve. (f) Forcible dilatation of the esophagus, again upon a level with the upper portion of the larynx and at the end of the pharynx, produced a very great immediate fall of the blood-pressure and complete arrest of respiration. The narrowest portions of the esophageal tube were at the pharyngeal and the cardiac extremities.

2. On a mongrel dog, in poor condition, weighing twenty-three pounds, under ether anesthesia, the following experiments were performed: (a) Introduction of the rounded, wooden handle of an instrument into the pharynx produced a marked "vagal" cardiac action and irregular, slowed respirations. This was twice repeated, with the same result each time. The middle portion of the esophagus was again dilated, and it was found that but minor effects were produced from as little or as much dilatation as was possible of this tube from the lower level of the larynx down to near the cardiac orifice. (b) On forcing an obturator into the esophagus very slowly upward until it entered the cavity of the mouth, no appreciable effects were produced until it reached a point opposite the upper half of the larynx, when a marked fall in the blood-pressure occurred and temporary respiratory arrest. (c) An injection of atropine in sufficient dose, as proven by Dr Bois-Raymond, to paralyze the nerve endings of the vagi was given. Then, on repeating the dilatation or choking in the area opposite the upper portion of the larynx and in the pharynx, no effect upon the blood-pressure was observed; the respirations were arrested as before.

3. On a Newfoundland dog, weighing forty pounds, in good condition, with a blood-pressure of one hundred and twenty-eight millimeters, under ether anesthesia, the following experiments were performed: (a) The rounded wooden end of an instrument, larger than the normal opening of the pharynx, was rather forcibly pressed through the mouth into the pharynx. This produced an immediate and very considerable fall in blood-pressure with temporary arrest of respiration, followed by irregular, slow respiratory efforts. Introducing the same into the cardiac end of the esophagus through an incision in the stomach, there was a slight fall in blood-pressure and slightly irregular respirations. Then, by exposing the esophagus in the middle of the neck and making a longitudinal opening, the instrument was

passed through this incision upward, forcibly dilating the esophagus at a point opposite the larynx, whereupon there was an immediate and very considerable fall in blood-pressure, with temporary arrest of the heart and of respiration. (b) A physiologic dose of atropine was given, and its efficiency proved in the usual way. Then a repetition of the foregoing experiment produced but little effect upon the blood-pressure, the little being sometimes a fall; but it did not prevent the arrest of respiration.

4. On a bull-dog in good condition, weighing twenty-eight pounds, having a blood-pressure of one hundred and forty-five millimeters under ether anesthesia the following experiments were performed: (a) Forcible dilatation of the esophagus in its middle portion produced a rise in blood-pressure and a slight slowing of respiration. This was repeated twice, in different portions of the esophagus, with like results. (b) The same experiment opposite the upper portion of the larynx produced a marked fall in blood-pressure, with "vagal" beats and temporary arrest of respiration; later on the respirations recovered their normal rhythm. (c) A physiologic dose of atropine, proved in the usual way, prevented the effect upon the heart, as was shown in the preceding case, but the respirations were arrested as before. Now, making sections of both superior laryngeal nerves and repeating the experiment of choking opposite the larynx, there was no effect produced upon either the cardiac or respiratory action. Traction downward on the esophagus produced a fall in the blood-pressure but the characteristic "vagal" beats were not observed and the respirations were unaltered. Traction upward produced a slight rise in blood-pressure, with no alteration in respiration.

5. On a healthy mongrel dog, weighing twenty pounds, blood-pressure one hundred and forty-eight millimeters, under chloroform anesthesia the following experiments were performed: (a) The handle of a chisel passed into the pharynx and forced down in imitation of choking produced a marked fall in the blood-pressure with arrest of respiration. The pressure of the chisel did not come in contact with the larynx but with the pharynx and the base of the tongue. (b) A physiologic dose of atropine prevented the appearance of the blood-pressure phenomena on repetition of the experiments. The respirations were arrested as before. Various portions of the esophagus were then tested, and, with the exception of the cardiac end, there was but little effect upon either the respiration or the blood-pressure. The cardiac end was finally dilated with a Goodell dilator with very great force, the operation resulting in a slight slowing of respiration. Finally on severing both superior laryngeal nerves, then repeating the pharyngeal choking experiment, there was a rise produced in blood-pressure with slight respiratory slowing; upon traction the fall in blood-pressure was much less and there was no respiratory alteration.

6. On a healthy bird-dog, weighing thirty and

one-half pounds, with blood-pressure of ninety-nine millimeters, under chloroform anesthesia, the following experiments were performed: (a) The wooden handle of an instrument was placed deep in the pharynx, and the free end carried outward into the angle of the mouth so as to produce a severe prying pressure against the walls of the pharynx. This produced a staggering fall in the blood-pressure, with complete temporary arrest of the heart and of the respiration. On severing both superior laryngeal nerves and repeating the experiment there was a very marked fall in the blood-pressure, with temporary arrest of the heart as before, but the respirations remained unaltered. (b) Division of the hypoglossal nerves on both sides and repeating the experiment produced a temporary arrest of the heart, with a staggering fall of the blood-pressure, but no effect upon the respiration. (c) As a control, very severe intralaryngeal manipulations were made. These produced no effect on either the respiration or the heart's action. Then choking was again done in the same violent way, through the mouth with the wooden handle of an instrument, producing thereby the same inhibition of the heart as before.

7. On a thirty-nine-pound dog, with blood-pressure at one hundred and ten millimeters, in poor condition, under chloroform anesthesia, the following experiments were performed: The glossopharyngeal, the hypoglossal, and the superior laryngeal nerves on each side were exposed, looped with thread, and the animal prepared for the following tests: (a) As a control, the animal was choked from below upward, opposite the upper portion of the larynx, with the production of the usual inhibitory phenomena; then pharyngeal choking was practised through the mouth with the usual force, and resulted in the usual inhibitory phenomena. (b) Both glossopharyngeal nerves were then severed. On repeating the above control manipulation, similar inhibitory phenomena were produced. (c) Division of both the hypoglossal nerves and then repeating the choking experiments produced practically the same reflex phenomena upon both the respiration and the heart. (d) After an injection of one-one-hundredth of a grain of atropine into the jugular vein, repetition of the same experiments produced no effect upon either the respiration or the heart's action. In the experiment of choking, especially when the foreign body was large, there was evidence that the vagus itself was mechanically stimulated, either directly by a direct continuity of pressure, or indirectly by being dragged on by structures that had a connecting anatomical relation with it, and that thereby a direct inhibition was produced.

*Summary of Experimental Evidence.*—It is noted in all the cases that the narrowest portions of the pharyngo-esophageal tract were at the pharyngeal and the gastric ends of the tube respectively. Artificial choking produced at the gastric end of the esophagus had some effect upon the respiration, usually slowing it, and caused also some fall in the blood-pressure, but in no case

were the effects of a striking nature. They were properly classed as minor phenomena. In no experiment on any part of the esophageal tract up to a point opposite the larynx were more than minor effects produced. Severe dilatation of this portion of the tube sometimes produced a rise, sometimes a fall, in the blood-pressure; the respiratory effects were never of much importance. However, at the points opposite the larynx, especially the upper part of the larynx, very marked respiratory and circulatory phenomena were caused by artificial choking. These effects were doubtless inhibitory and were produced through the vagus.

That the cardiac action was through the vagus is proved by the fact that physiologic dosage of atropine in every case prevented the fall in blood-pressure and the "vagal" strokes. That the superior laryngeal nerve was not the only path over which the inhibiting impulses passed is proved by the fact that the pharyngeal choking, especially when accompanied by considerable violence, produced a marked fall—in fact, a collapse—in blood-pressure after the superior laryngeal had been severed. That it was not through the hypoglossal or the glossopharyngeal that this collapse was produced was proved by the observation that the same phenomena occurred after their severance.

Direct observation of the mechanical dragging on the upper portion of the vagus through the medium of the numerous anatomical structures lying in such close apposition to it and so closely interwoven, together with the negative proof adduced by the experiments, was sufficient to show that a part at least of the inhibition phenomena were due to a mechanical irritation of the superior laryngeal; but that it was not the only tract over which impulses passed was proved by a slight alteration in the respiratory action after the superior laryngeal had been severed, although no such marked effects as before could be produced. It is true, however, that all the evidence goes to show that the superior laryngeal is the only source through which choking may cause very striking reflex inhibition of the respiration. Tolerance, so far as the respirations are concerned, is very soon acquired; it is later acquired on the part of the circulation.

*Some Observations.*—Choking, then, produced symptoms of reflex inhibition, partly through the superior laryngeal and partly through the trunk of the vagus itself. In the case of the larynx all the symptoms are due to mechanical stimulation of the superior laryngeal nerves. In a given case, then, of threatened asphyxia; if operative procedures are to be undertaken for dislodgment of a foreign body, it would be well to give the preliminary dosage of atropine to prevent a great collapse or possible death during the operative procedures. It is perfectly apparent that in cases in which there is a history of choking without inhibition phenomena the foreign body, if large enough to cause much pressure, must be at a point below the level of the larynx.

(To be Continued.)

## CLINICAL MEMORANDUM.

HERNIA IN PREGNANCY AND PREGNANCY  
IN HERNIÆ, WITH NOTE ON UMBILI-  
CAL HERNIA.<sup>1</sup>BY THOMAS H. MANLEY, M.D.,  
OF NEW YORK.

HERNIA during or antecedent to the pregnant state we sometimes see, and there are recorded cases of impregnated herniæ; *i.e.*, when the uterus lies outside the abdomen in a hernial sac. The greater number of modern works on obstetrics and gynecology are silent on the subject of hernia as a complicating factor, or an accident in maternity or delivery. This is somewhat remarkable because the surgery of obstetrics has undergone great expansion of late years, and gynecology has come to claim the lower abdominal areas as belonging to its domain in addition to the open passages and pelvic viscera. The fully equipped obstetrician of our time must be skilled in operative surgery, and hence prepared to deal with complications which, like herniæ, so frequently attend maternity. Therefore we would be led to believe on a review of the subject that, as the surgeon is somewhat chary about encroaching on the preserves of the gynecologist, and the latter hesitates to include any type of hernia as coming within his legitimate field, some doubts remain whether obstetric hernia belongs to the province of the latter or the former. But, however this feature of the question may be decided, the fact remains that as far as can be learned neither one up to this time has dealt with the subject with the fulness its importance merits. As has been demonstrated the evolution and pathology of this infirmity exhibits special and characteristic features in the female, and as we advance a step further we will observe that during the function of procreation it presents many remarkable and unique phases. For many cogent reasons it is important to determine what influence pregnancy has on this disease as a whole; whether it augments or retards it. Many of our most noted and eminent authorities of the past strenuously maintained that conception and child-bearing exercise a salutary influence on certain diseases and tendencies to disease, some including hernia in this category. In order to decide this and be able to judiciously advise those females who suffer from this infirmity and contemplate matrimony, it is necessary not only to listen to the testimony of our own contemporaries, but also to turn to those whose experience best entitles them to be heard on this important aspect of hernia.

In discussing this topic, Gurdieu, a noted obstetrician in the early part of this century, observes that "there are two causes which dispose the pregnant female to hernia, one is a relaxed softened state of the muscle fibers, with an excess of fluid in the tissues, the other is the weight

of the gravid uterus on the intestines." He further notes that one who had hernia in childhood is prone to its return in pregnancy, but after delivery it tends to disappear. He fails to specify the types alluded to. Kuhn who gave special attention to ruptures in pregnancy, maintained that for some months after conception small reducible ruptures tend to recede as the uterus rises out of the pelvis; in this way many permanent cures were affected. He further showed that when relapse occurred a fresh protrusion of the peritoneum came down and the old degenerate sac, now distended with fluid, lay in close contact with it. My own experience has been that groin ruptures as a general rule are neither produced nor aggravated by child-bearing. In those cases known by the laity as "falling of the womb," it was a custom with many practitioners in the past to encourage pregnancy as a probable cure. In my own opinion there are certainly no valid grounds for prohibiting marriage in simple groin ruptures, as we have no positive proof that they are produced by child-bearing, although diminutive femoral herniæ are probably aggravated by it. But navel ruptures often greatly augment in volume during pregnancy, if they are not sometimes produced by it, and with repeated confinements may attain enormous proportions.

The uterus is sometimes lodged in the sac of a hernia and may there become impregnated. Fothergill says, "The uterus occasionally is lodged in the sac of an umbilical, femoral or inguinal hernia, where it may become impregnated; in which case an abortion may be induced and the hernia reduced or hysterectomy may be performed." Simon and Sabitier both report instances of impregnation of the uterus which had escaped through the inguinal and femoral portals, these sometimes advancing to term. Impregnation of the uterus in umbilical and ventral herniæ is not so very unusual. But what shall be done in the event of the impregnation of the uterus in a hernia of the groin? The simplest, safest and quickest relief would be obtained by a hysterectomy, but this would violate one of the moral foundations of surgical science. As early as 1531 Nicolaus Pol, an Italian physician, removed a mature infant from a massive labial hernia, the mother sinking on the fifth day and the child surviving. In 1761 Govey, a Rouen surgeon was visited by a young lady of society, whom he had reason to suspect was suffering from an infected bubo. At the end of four months, as it was steadily increasing in size, he decided to open it, and on doing so found a living fetus. He baptized it and cut the cord. The result is not stated. Sylvester Saxtorph, a Dutch practitioner, records a unique case of this description in a poor peasant woman who previously had four normal labors. The gravid uterus escaped through the abdominal wall and hung down below the knees, but it was observed that a very thick, broad pedicle projection passed up through it into the abdomen. The case was seen by several of the most noted physicians of Holland, but none ven-

<sup>1</sup> Abstract of a paper read at the Annual Meeting of the Mississippi Valley Medical Association, held at Chicago, October 3-6, 1899.



tured to interfere. She went on to term when the uterus became the site of violent contractions, sent the fetus up through abdominal portal and down, out and alive through the natural passages. He followed up the contracting uterus, pressed it inside and there it remained. He writes that the point of the emergence of the hernia was not a normal canal, but an opening through the muscles.

Most writers on this strange freak note that, as in all ectopic pregnancies, there is an invariable tendency to early abortion. Cazeaux, in 1840, cited a case of this class occurring in a young woman, twenty-four years old, pregnant for the sixth time. Pregnancy continued to the eighth month when the parts were opened and the infant delivered, both mother and child being saved.

*Maternity and Exomphalos.*—All are familiar with the influence in exomphalos as a causative factor. Umbilical herniæ of large dimensions we rarely see, except in child-bearing women. Whether alone, *ab initio*, pregnancy produces exomphalos there are some good reasons to doubt, but no one can deny that it leads all others as an aggravating factor. In some cases the whole umbilical opening gives and practically all the contents of the abdomen make their way out into this accessory cavity. In many the investing integument becomes so wasted that the vermicular movements of the intestines may be plainly felt, and cases are on record in which the atrophied integument has given way during the violent muscular contraction of labor, and the intestines were projected outward through the breach. This type of hernia presents many complicating, troublesome and dangerous features. It is one variety which never undergoes spontaneous cure. It is difficult or impossible to control by mechanical support; is prone to erosion, hemorrhage and incarceration, and is rarely completely reducible. It is one of the herniæ liable to impregnation, when it partly or entirely includes the uterus. Bedford has published the particulars of a case in which the head of the fetus was caught at the neck by the annular collar of the navel. The head was outside but by cautious taxis the constriction was overcome and the head forced back into the abdomen. Murray has seen an umbilical extrusion contain a fetus of the eighth month. In one of my own cases, that of a negress, there was in addition to the uterus a mass of fibroid outgrowths in the hernial sac.

*Strangulation and the Pregnant State.*—At first it would strike one as self-evident and conclusive that, in a woman with hernia, every delivery must entail a great risk, and the throes of labor must lead to a marked augmentation in volume of the hernia and a tendency to intestinal strangulation. Landis declares that "in hernia, especially of the non-reducible type, there is great danger of strangulation during labor," and Barnes affirms that "although hernia may not obstruct labor, it may become a serious source of danger to the mother." That pregnancy is an aggravating factor of various types of hernia all

will concede, but experience and medical history prove beyond question that labor and simultaneous strangulation are incompatible conditions. No such case has come to my knowledge nor can I find a single case of labor at term complicated by strangulation in the annals of medicine on record. This would go to demonstrate clearly that mechanical pressure, under all circumstances, is only one factor in the production of strangulation, and it may be but a coincidence. Bedford raised the question as to what should be done in inguinal or femoral hernia in labor where with each pain the mass is vastly augmented; whether, in view of possible strangulation, we should be content to keep the hernia in check by manual pressure, or hasten delivery by artificial means.

We are in possession of no evidence that the gravid uterus is ever a cause of strangulation; on the contrary, advanced pregnancy rather serves as a deterrent. Several cases of strangulation during pregnancy are scattered through modern literature. These were evidently all early, as the subjects are reported to have quite generally "miscarried or aborted after operation." Unna reports one, a woman of thirty-seven, with femoral strangulated hernia and gangrene of the intestine. Artificial anus. Miscarriage on fifteenth day. Reavray and Jollivet each report cases in the third month of pregnancy with femoral strangulated herniæ. Kelotomy. Abortion on twenty-first day; death on twenty-seventh day. Mr. Canton reports a case of strangulated femoral hernia in the fourth month of pregnancy. Kelotomy was performed; miscarriage and death the same night. Dr. W. B. Fletcher of Cincinnati, O., has reported two cases. One miscarried on the tenth day after kelotomy for femoral hernia. His second patient was pregnant four months and was operated on for strangulated femoral hernia. Miscarried ten days later, but recovered. Weiner operated on another case in a patient thirty-seven years old, with femoral hernia. Pregnant three months. Miscarried on third day. Recovered. It is rather curious to note the absence of records of strangulated exomphalos in pregnant females in recent surgical literature, although, nearly a century ago, such cases were successfully treated by kelotomy and reduction. Chelius records three cases of strangulated umbilical hernia in pregnant women. Cooper's patient was in the eighth month of pregnancy, Lawrence's in the eighth month, and Clement's in the third month. Kelotomy was performed in each case with recovery.

*Herniated Conditions in the Female.*—In the early part of the past summer, 1899, two cases which aroused my interest came under my care for treatment. They presented pathologic states, which, up to the present time, have not received systematic study. My patients were both young women under thirty; one the mother of one child, and the other of two children. They were both in good health and were neither corpulent nor over-stout. They came to ascertain if anything could be done for a giving-way or a marked pro-

lapse forward of their abdomens which had followed their confinements. One of the patients came from Brooklyn and her family physician had taken her to one of the most noted surgeons of that city, who pronounced "the pot belly" due to excessive fat. This examination must have been a superficial one, for on exposure and careful manipulation, it was found that over the most prominent part of the abdomen there was neither adipose tissue nor muscle, for under the thin, wasted, projecting pouch the peristaltic move-

Fig. 1.



Before Operation.

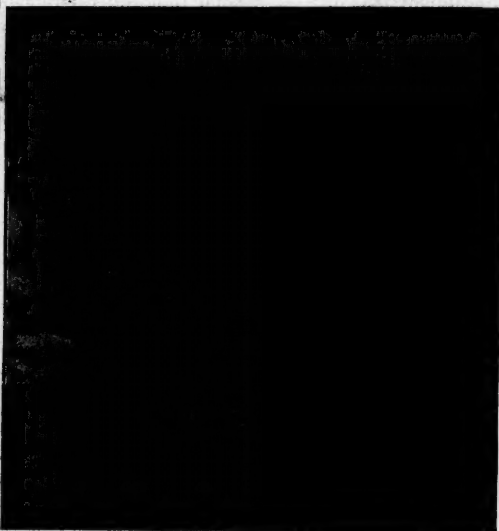
ments of the intestines could be easily made out. It seemed as though the whole musculature of the lower and lateral walls had given way and the muscles been resorbed, for nothing remained but a thin baggy envelope of fibrous structure, under a wrinkled, atrophied integument. The other case presented similar features. Both were particularly desirous for relief from the ungainly deformity which they possessed. It was my conviction in both cases that nothing curative could be promised, as degenerative and disintegrating changes had involved the muscle elements and destroyed them beyond any hope of repair.

The etiology and pathology of this unfortunate state must be of great importance to the obstetrician, for the probabilities are that the only effective therapy, if any, must come through prophylaxis, which should consist of a properly adjusted broad belt to be worn through the latter part of the pregnancy. Anything which produces very marked intra-abdominal pressure may lead to extensive atrophic changes in the muscles of the abdominal walls. Thus I could not find, on autopsy, a muscle fiber in the wasted sheath of the recti or lateral oblique of the abdominal wall in a woman who had for many years been subject to a large uterine fibroid. The violence of rapid labors, or the effects of those that are tedious and protracted, may tear the muscles from their attachments or widely sunder the central raphe below the umbilicus and thus pro-

duce a diverticulum or diastasis of the recti. Thereafter central bulging of the abdominal walls follows, into which abdominal organs tend to gravitate. This furnishes the basis of visceral ectopia, enteroptosis, with displacement of the liver, spleen or kidney. The full integrity of the abdominal walls is forever destroyed and all the elements of true hernia are present to remain.

Relative to its frequency, McCready found 61 cases of hernia in the examination of 3625 females in the London Truss Society from 1888 to 1890. In the aggravated cases, he adds, "the muscles quite disappear. This allows the abdominal contents to undergo displacement and topple over the pubis in a bag-like pouch, the shape, position and volume depending on the situation and extent of muscular damage." It is somewhat remarkable that more attention is not given to this subject in the text-books of obstetrics or gynecology, and I do not find any reference to it at all in the most of the later works on surgery. In Curtis' admirable treatise, however, we do observe that this important lesion did not entirely escape the author, for he says that "a separation of the rectus muscles produces a form of ventral hernia which is seen after pregnancy in

Fig. 2.



After Operation.

those who have been delivered at term." This type of the infirmity derives its great interest from the points of view of prophylaxis, causation, lack of tendency to strangulation or incarceration. Its progressive increase is quite beyond surgical relief and is rather incoercible to prosthetic support.

Patient, a female aged forty-nine years; married; mother of six children. No history of trauma or hereditary tendency. She noticed the present exomphacele after the birth of her third

child. It continued to gradually increase in volume, although it never gave her much inconvenience or worry until about six months previously, when the surface became eroded and began to bleed. In January, 1896, she was sent to me from Wilkesbarre, Pa., by Dr. A. P. O'Malley, for omphalectomy.

I found her an active, vigorous woman. There were no symptoms pointing to intestinal complication, and on examination it was evident that the extrusion consisted of an epiplocele. The integument over it had become as thin as parchment, with striated cicatrices radiating downward. The mass was entirely irreducible. Considering the character of the hernia and the general condition, it seemed to promise a most successful issue after operation.

The operation consisted in making a double elliptical incision along the lateral planes of the stem of the tumor. Then a free opening was made to the peritoneal cavity and the whole mass drawn well forward. It was caught at the root, secured at the base, and firmly held with strong forceps. Division was made though very cautiously and the numerous vessels secured separately by five silk sutures. When division was complete the lateral peritoneal edges were drawn well over the large nude stump and closed securely with a double row of continued catgut sutures. Then the stump was dropped back into the peritoneal cavity and the opening near the umbilical aperture was closed by heavy, through-and-through silk sutures. Recovery was rapid and she left for home three weeks after the operation at St. Mark's Hospital.

## MEDICAL PROGRESS.

**Mercurial Inhalations.**—It has for a long time been held that the mercury vapors arising from the inunctions given to syphilitics had more marked therapeutic effect when inhaled than the small amount of the drug which was absorbed by the skin. Working on this fact for a basis, R. Kutner (*Berlin klin. Woch.*, Jan. 8, 1900) describes an apparatus invented by himself for the better administration of mercury by inhalation. Roughly explained, his method may be stated as follows: A closed box, in which there is an arrangement whereby the patient can work the mechanism, is provided with a tube which leads to a mouthpiece. The mechanism provides for the rubbing of mercurial ointment within the box over successively changing surfaces while the patient remains with the mouthpiece in position over his nose and mouth. It can easily be seen how advantageous such a method of administering a disagreeable remedy would prove. Not only is the skin unaffected and the attendant discomforts and annoyances prevented, but the dosage is better regulated and none of the vapor passes off uselessly into the surrounding atmosphere. Furthermore, it is far more likely that patients

become affected with stomatitis from breathing continuously the vapor arising from the old inunction method, than from absorbing the vapor several times daily, even although at these times the dose is more concentrated and powerful. The most important consideration, however, bearing on the therapeutic value of this method of administration is whether a sufficient quantity of mercury can be inspired in a sufficiently short period of time to be of positive value. Our author says that there is no question of this whatever. He states that with one half-hourly inhalation daily a noticeable amount of mercury can be demonstrated and recovered from the urine after a few days. This proves conclusively that the method is of practical utility. Symptoms of mercurialism were never noticed but Kutner insisted on the use of chlorate of potash as a gargle regularly after each inhalation. In one or two patients, indeed, in whom previous inunctions had resulted in gingivitis, the present inhalation method gave good results without a trace of poisoning. The author promises further facts regarding the procedures and investigations.

**Convulsions after Labor.**—When convulsions occur immediately after labor the physician is always more or less in the dark as to their causation and the proper means of relief. Therefore A. K. Bond (*Am. Jour. of Obstet.*, Jan., 1900) reports a case and discusses its etiology and treatment. The patient, twenty-three years of age, had always been very healthy. During the last two months of pregnancy she had had occasionally, on lying down, a twitching of the lower limbs. This would compel her to sit up, whereupon the twitching ceased. She was inclined to be constipated, but kept her bowels open with aperients. On measurement, the pelvis was found to be about one-half inch deficient in each of its dimensions. The urine was normal. There was no dropsy. During the whole of the first and second stages of labor the patient repeatedly vomited bile-stained matter. The labor was slow and it was finally necessary to deliver the child with forceps, because of the large size of the head and the small pelvis. A perineal tear required three sutures. There was very little hemorrhage during delivery, the uterus contracted well, and the pulse and temperature were satisfactory. The patient complained of headache a few hours later, and about ten hours after delivery had a severe convulsion. The temperature was 100.5° F., pulse 120 and hard, and respiration 28. Urine was abundant and normal, except that it showed a slight trace of albumin, due, as was supposed, to the preceding convulsive state. Patient was conscious and had persistent headache. The patient seemed to be suffering from an acute intestinal poisoning. Seven or eight more convulsions occurred during the next four hours, although large doses of chloral and potassium bromide were given. There was occasional vomiting so that probably but little of the chloral mixture was retained. Finally, venesection was



resorted to and about three ounces of blood drawn. There were no convulsions after the bleeding. The patient was then given croton oil, calomel, and a strong vegetable cathartic, at intervals, and after one foul-smelling passage and several easy ones, she was free from nausea and headache. On the third day milk came freely in both breasts. The urine was normal. For about two weeks there was an elevation of temperature, which was considered to be a "surgical fever" from the laceration of the cervix and perineum. The lochial discharge was never offensive. Bond thinks that the predisposing cause in this case was the nerve exhaustion of a severe, protracted instrumental labor and the immediate cause an acute stercoraria. He believes that sufficient venesection to lower the arterial pressure and just enough croton oil to carry off the septic mass was the correct treatment for stopping the convulsions.

**Intra-abdominal Hernia.**—W. Meyer had recently an opportunity to study two cases of retroperineal hernia of the right side. In both patients the cecum was placed unusually high so that the root of the mesentery of the small intestine extended almost transversely across the spinal column. Just below the root of the mesentery, and about midway between the cecum and the vertebrae, there was a pocket with its mouth opening upward. This pouch, situated like an open hand-bag just below the small intestine, was capable of receiving into its cavity the whole of the small intestine from the beginning of the jejunum to the end of the ileum. Indeed, the difficulty with which the intestine escaped from this receptacle caused symptoms of strangulation and led to operation. Meyer explained the development of this pouch by supposing that a hernia had formed in a parajejunal recess. Such a hernia instead of pressing to the right between the mesentery and the posterior abdominal wall, as would be the natural course of its development, grew downward on account of the horizontal position of the mesentery. As time went on, the weight of the contained intestine dragged and stretched the sac, until it reached well over the pelvic brim. One patient whose symptoms of strangulation had lasted not more than eight hours, died on the table ten minutes after the beginning of the operation. The condition of affairs was readily recognized, and the surgeon was engaged in withdrawing the reddened coils of gut when death took place. Ether was the anesthetic employed. The other patient who had suffered for two days with symptoms of obstruction made a prompt recovery from operation. (*Deutsch. Zeit. f. Chir.*, Vol. 53, p. 547.)

**Edema of Skin in Influenza.**—A new manifestation of influenza has been noted by A. Rieger (*Munch. med. Woch.*, Jan. 2, 1900). A severe pruritus of the head and face was present among the prodromal symptoms. With the full development of the disease a remarkable edema of the scalp appeared. The skin did not appear hy-

peremic as in erysipelas, but the enormously distended veins gave evidence of a passive congestion. The swelling eventually involved the cheeks and nose, but did not implicate the lower jaw. The original areas soon returned to normal as the face became involved. The condition was complicated by a well-marked fever, which terminated with the disappearance of the effusion. A slight pustulation, but no desquamation, followed this peculiar form of influenza, which, the author thinks, was due to a peculiar concentration of the poison in the skin.

**New Guaiacol Preparation.**—The numerous disadvantages of which the original antiphthisical drugs creosote and guaiacol are possessed have led modern therapy to employ such substitutes as benzosol, duotal, etc. These, being insoluble and improperly absorbed, reach the foci in too attenuated a form to develop the proper antitoxic effect necessary. A. Einhorn (*Munch. med. Woch.*, Jan. 2, 1900) finds diethyl-glycoll-guaiacol to be an easily soluble salt which promises to replace creosote and its derivatives since it lacks their undesirable properties. Experiments on animals have proven this salt to be non-poisonous and non-irritating in moderate concentration. In its antiseptic powers it equals boric acid and is also slightly anesthetic. Even in daily doses of 3-12 gms. (45-180 grains) in wafers, or by hypodermic injection, no deleterious effects on the system were noted. The large doses in which this drug may be prescribed are an advantage, since thus a thorough saturation of the body is assured. In addition to pulmonary tuberculosis, encouraging results have been achieved in tuberculous diarrheas and locally in ozena, sarcomatous, carcinomatous and syphilitic ulcers, stomatitis, chronic conjunctivitis, empyema alveolaris, and as irrigations in pyloric stenosis and bladder inflammation.

**Otitis Media in Infancy.**—Physicians are probably called to attend children for gastro-enteric disturbances more often than for any other cause. E. H. Pomeroy (*Boston Med. and Surg. Jour.*, Jan. 18, 1900) thinks that most of the diseases of childhood are more easily demonstrated to be of infectious origin than can be proven in adults; that the pharyngeal postnasal chamber is the distributing point for infection of the middle ear, the lung, the brain, the stomach, and the intestines; and that the middle ear is an incubator promoting general toxic disturbance in many cases of localized infectious disease. He presents, and discusses at some length, statistics of Ponfick, who made 100 autopsies upon infants dying of congenital heart disease, extensive burns, non-infectious dermatitis, infectious dermatitis, diphtheria, scarlatina, pneumonia, meningitis, gastro-enteritis, otitis media, otitis media with acute bronchitis, chronic tuberculosis, and congenital syphilis. Although otitis media was not suspected in the majority of these cases, it was found to have been present in all except nine. He also cites the results obtained by other investiga-

tors, showing the frequency of otitis in infants. A strong plea is made for the routine examination of infants' ears in all cases of grave disease, as otitis is undoubtedly an astonishingly frequent, and a very serious complication. Pomeroy cites five cases showing the advantage of routine examination of the ears in cases in which the ears apparently have nothing to do with the general condition. In one case no examination of the ears was made, but an autopsy showed otitis media. The ears of the other four cases were examined, otitis discovered, the membrane punctured, and one to four drops of pus liberated. This was followed by almost immediate recovery. Of these five cases, two presented the symptoms of gastro-enteric disturbance alone, one of gastro-enteric disturbance with bronchopneumonia, one was simply fretful with almost imperceptible pulse, and was constipated, and one had vomiting, a temperature of 105° F., and a cough which always caused crying.

**Conjunctivitis Neonatorum.**—Ammon (*Munch. med. Woch.*, Jan. 2, 1900) doubts that all cases of gonorrheal ophthalmia are due to infection during birth since so many cases develop later than the incubation period would allow. They are to be traced in many cases to poor hygienic surroundings, which favor post-natal infection. Gonococci were not present in all cases; some of the severe ones gave staphylococci, while the pneumococcus appeared to be the exciting cause in some forms which improved as if by crisis. The pneumobacillus and the pseudoform of the Neisser coccus were isolated in several instances. In discussing the treatment, mention is made of the unreliability of silver nitrate since its powers of penetrating into the deeper layers of epithelium are at best very slight. Protargol has likewise proven itself untrustworthy in this direction and the proper drug has yet to be discovered. A mild antiphlogistic treatment, such as frequent irrigation with normal salt solution and the application of cold pads to the lids, is attended with the best results. After the acute stage is over, protargol may be used as instillation and the sound eye may be prophylactically treated by the same drug.

**Slipped Knee-joint Cartilage.**—W. H. Bennett (*Lancet*, Jan. 6, 1900) after a careful study of 200 cases of slipped meniscus gives these data: 182 males; 18 females; left knee 133; right 67; inner side of knee 155 and outer side in 45 cases. Patients ranged from thirteen to sixty-two years of age. The symptoms are precise; sudden pain, fixation at varying angle, effusion into joint and tenderness over the damaged cartilage. These symptoms may appear during normal movements, or after a wrench or blow, rotation of the leg upon the thigh being a prominent causative factor. Reduction may be spontaneous, or may follow manipulation. The fulness felt along the cartilage is due to extravasated blood or inflammatory exudation rather than to projecting cartilage. The only positive sign of displacement is

the existence of a deficiency just above the head of the tibia in such cases as inward dislocation. Closely related to "slipped meniscus," but not mentioned in surgical literature, is another condition, a bruising of the periphery of the cartilage without displacement or loosening but with local blood effusion and later some inflammatory exudate which work between the bone-ends, and act as a foreign body. In this condition the attack is usually mild, the limitation of movement is slight, but reduction cannot be accomplished nor can the leg be fully extended, results easily explained by referring to the pathological state. Return to full function in these cases is always gradual, *pari passu* with absorption of the exudate about the periphery of the cartilage. Prolonged attempts at reduction aggravate the local condition. Treatment may be subdivided as follows: (1) Temporary rest, massage and exercise after reduction, or after satisfying oneself that the cartilage is simply "bruised" and, therefore, reduction impossible. The joint should be kept at rest for from four to seven days, with a splint. During this period the effusion usually disappears and until it has gone no movement should be permitted. Massage of the muscles and joint without movement cannot be commenced too soon. It prevents muscle atrophy and flaccidity of the joint capsule which is a frequent cause of failure in the treatment, and it expedites the absorption of the effusion. After the effusion is gone, passive movement, without rotary motion, is commenced. A week later active walking, with stiff knee, and after the third or fourth week ordinary walking is permitted. Massage must be continued three weeks to six months, according to the condition of the thigh muscles and the joint capsule, since these must have good tone in order to prevent the joint from wabbling. The iliotibial band is an important factor in maintaining the tone of the capsule, therefore attention must be given to the gluteus maximus and tensor fasciæ femoris muscles. This method of treatment sufficed to cure 112 of the 200 patients. (2) Treatment by apparatus is allowable only when the "rational" treatment cannot be carried out, or where it fails to prevent abnormal lateral mobility, and in those cases where there have been frequent recurrences and operation has been rejected. The only satisfactory apparatus is one preventing rotation in the knee-joint. (3) Operative treatment is indicated where palliative treatment has failed or where speedy relief is urgent. The operation of choice is a longitudinal incision over the cartilage followed by excision of the damaged meniscus.

**New Method of Gastrostomy.**—Desguin (*Ann. de la Société Belge de Chir.*, October-November, 1899) realizing the importance of simplicity in the operation of gastrostomy on an exhausted patient, has devised the following procedure: A flexible silver tube one-third of an inch in diameter is bent at its middle at a right angle. Over one end of this is fitted a soft rubber tube ten

inches long. The diameter of the rubber tube should be slightly less than that of the silver one, so that it may fit tightly upon it. The overlying skin is disinfected before the patient is brought upon the table. He is then given a little chloroform, or, as the author prefers, an injection of cocaine is made. Owing to retraction of the stomach, usually present in such cases, he prefers to make the incision along the left costal margin. With a pair of forceps the stomach is quickly pulled out through the wound. It is opened and the silver tube passed into it. A catgut thread is bound around the mouth of the gastric wound to prevent the stomach from slipping off of the tube. Two silk sutures are then passed, one on either side of the tube, through both lips of the abdominal wound and through the wall of the stomach at a distance from its opening, equal to the thickness of the abdominal wall. By this means a little funnel is formed at the bottom of which the gastric fistula is situated. The abdominal wound is closed by four or six sutures. The tube comes out spontaneously in about ten days. The author draws the following conclusions: (1) It is desirable to convince physicians of the slight risk of gastrostomy if it is performed sufficiently early. (2) It is equally important to emphasize the high mortality of gastrostomy as practised upon cachectic patients in the last stage of inanition. (3) Inanition is due to digestive incapacity from various causes, which is often greatly increased by narcosis. (4) On this account cocaine should be substituted for chloroform. (5) Complicated procedures are out of place with a debilitated patient. (6) The method of operating above described merits adoption on account of its simplicity, and because it does not require a general anesthetic, and permits the immediate nourishment of the patient and lavage if necessary.

**Partial Myxedema.**—Hertoghe (*Gaz. Heb. de Med. et. Chir.*, Dec. 17, 1899) points out that, while myxedema is well-known and can be readily diagnosticated and treated, there are many degrees between entire thyroid integrity and complete loss of function of this gland, concerning which greater difficulties will arise. Three features should be borne in mind: (1) The study of the organic and functional characteristics of the parents of children manifestly hypothyroidic; (2) the analysis of true myxedema in the feeblest traces of the hypothyroidic taint; (3) thyroid treatment of conditions suspected to be myxedematous. True myxedema is characterized by premature senescence of the whole organism; this is seen to a lesser degree in mild chronic hypothyroidism. The dominant symptom, however, is an obstinate constipation. This is a life-long complaint and all the other symptoms are apt to be ascribed to this one trouble. Once the disease is well established the patients are somnolent and easily fatigued and everything physical or mental seems to be beyond their energy. Their sleep is poor, they rise early, more wearied

than when they lay down, and it is only toward evening that the symptoms abate. The hands are cold, moist and formless, and with a little experience the physician may appreciate the extent of the disease by a mere hand-clasp. In children the most important sign is backwardness. The tendency here is toward cure, but in adult women it is not until the menopause is reached that improvement is noticed. The effects of thyroïdine are no less marked than in true myxedema. It should, however, be used with discretion. Alcoholic drinks, tobacco and the excessive use of sugar must be strictly forbidden. The disease is often mistaken for and treated as anemia, and hence wines, beers, baths and cold douches are wrongly prescribed. Thyroid extract is more active and better tolerated after a preliminary treatment by means of the mild alkalis, sodium bicarbonate, etc. Since diarrhea may be caused by this drug, it is well to combine it with bismuth.

**Post-partum Hemorrhage.**—E. P. Davis (*Med. Rec.*, Jan. 13, 1900) lays considerable stress upon the necessity of appreciating the most frequent causes of post-partum hemorrhage and thus making the treatment less often required and more effectual when it is needed. The chief cause of this dangerous condition is exhaustion of the patient; local exhaustion, which is seen in the relaxed condition of the uterus, and general exhaustion which is observed in those cases of protracted labor in which the mother fails to expel her child spontaneously. The retention of a partially detached placenta, lacerations of the genital tract and profoundly altered conditions of the patient's blood are less frequent causes. Thorough examination should always be made as early as possible to learn the size and condition of the mother's parts and the presentation of the child. To avoid exhaustion during the first stage, the patient should be given liquid foods frequently, allowed to sleep, even if hypnotics are necessary, and the bladder and rectum kept emptied. McLean's double bag will greatly assist in dilating an obstinately firm cervix. In the second stage, mere "signs of exhaustion" are now considered indications for instrumental interference, which should be done under ether. After the expulsion of the placenta an examination of the parts will disclose any cause for hemorrhage in the cervix or vagina and this should at once be sutured in case the hemorrhage is at all severe. Pressure on the uterus and massage should be maintained until the organ is firmly contracted, combined with internal medication of ergot and one-thirtieth of a grain of strychnine sulphate with one-two-hundredth of a grain of atropine. Should the uterus fail to contract a vaginal douche of salt solution at 110° F. will be found very effectual. Should further stimulation be necessary or if retained blood-clots or placenta are thought to be present, a uterine douche of hot salt solution in a one-per-cent. lysol solution may be used combined, when necessary, with the use of the blunt curette. Failing in this, the



uterine cavity should be tamponed with iodoform gauze, but only under the strictest antiseptic precautions. The gauze may remain for from twenty-four to thirty-six hours and its removal should be followed by a gentle but thorough irrigation with decinormal salt solution at 105° to 110° F.

**Artificial Production of Gout.**—Gout is known to attack birds and other mammals as well as *homo sapiens*. In birds especially the disease is a much-feared one, producing similar uric acid concretions in the joints and lower extremities and affecting the kidneys. H. Kionka (*Berl. klin. Woch.*, Jan. 1, 1900) describes experiments conducted on poultry to produce the gouty diathesis. Although the disease can be produced in birds by means of the internal administration of chromic acid or oxalic acid, the author prefers to obtain the condition by affecting the nutrition. This he did by feeding hens with fresh horse-flesh, free of fat, keeping them in a roomy enclosure. They had as much water as they desired. The captives rapidly became accustomed to their meat-diet and seemed at first to thrive very well. In from three to five months the first symptoms of sickness appeared. These gradually drifted into well-developed gout. Various types of the disease manifested themselves. The hens at first became affected in their movements, unsteady in their gait, falling down when jumping from their roost, dragging up their legs as though in pain when stepping about. Then followed weakness in the limb, swelling of the joints, loss of appetite and unwillingness to move. Between such attacks all the symptoms disappeared only to reappear successively shorter intervals. All signs and symptoms then became aggravated, the appetite failed completely, the limbs remained swollen and in a short time death ensued. In the more chronic cases the same symptoms were evident but were much longer drawn out. Localized concretions were well marked in the joints and between the tendons of the legs and feet. There were uric acid infarcts in the kidneys and uric acid deposits in the serous membranes. The hens seemed to show, while still alive, a great longing for lime. Two of them were, therefore, fed with 10 grams of pulverized egg-shell daily. Under this influence the excrement of these two birds many days exceeded 500 grams and their thirst was consequently increased. The reaction of their excrement also changed from acid to alkaline, while the quantity of uric acid given off was markedly diminished. The explanation of this may be said to be that the lime enters into combination with the nitrogenous compounds, which otherwise would form uric acid, to form urea and urates. In the human economy it is not impossible that the same processes are due to the same causes, and this opens up a large field for further investigation.

**Surgery and Goiter.**—G. Reinbach (*Beitr. z. Klin. Chir.*, vol. 25, p. 267) gives the results ob-

tained in Mikulicz's clinic after various operations upon benign goiter. One hundred and sixty-two operations are recorded, with four deaths, giving a mortality of 2.5 per cent. In sixty-three cases enucleation was performed without a death. Three of the deaths after partial resection, were attributable to pneumonia. The fourth death followed ligation of the thyroid arteries. Most of the patients were seen at various times after the operation and only in one instance was there any recurrence of trouble. One patient developed tetanic symptoms after operation, due apparently to the fact that not enough of the thyroid was left to satisfy the needs of the body. The tetanus was of short duration.

**Failure of Diphtheria Antitoxin.**—During the last few years the antitoxin treatment of diphtheria has been generally accepted by the medical profession as being the most satisfactory, since it was theoretically an ideal one and also on account of the glowing reports which have been made in its favor. Enough time has now elapsed to gain a more accurate knowledge of its true efficacy in general practise and certainly the results are not so good as had been hoped. In the *Medical Record* (Jan. 20, 1900) J. E. Herman has given a rather extended report of statistics and insists upon the uselessness of the antitoxin treatment. He draws a close distinction between the toxin treatment which has proven successful in cases of smallpox, hydrophobia, and sarcoma, and the antitoxin serum which has been used in cases of diphtheria, tetanus, typhoid fever, tuberculosis, etc. He claims that it cannot be shown that any of these antitoxin serums have proven of any decided value, the somewhat lessened mortality in diphtheria being due rather to improved methods of medication and especially intubation than to the use of the antitoxin serum. Intubation is naturally used much earlier than tracheotomy would be, and hence many of the distressing and often fatal symptoms of stenosis are avoided. It is further claimed that the Klebs-Loeffler bacillus has no etiological relation to diphtheria, and many eminent authorities are quoted to show how frequently this bacillus is present in the normal throat or in cases of simple rhinitis or pharyngitis without the peculiar and general symptoms of diphtheria.

**Myopia in School Children.**—That near-sightedness has markedly increased with civilization and, in fact, is almost unknown among savage races is fully appreciated. The confinement and long hours of eye-strain which school children are now obliged to undergo results in the elongation of the eyeball and consequent myopia. P. A. Callan (*N. Y. Med. Jour.*, Jan. 20, 1900) says that many of the ailments of the school children of to-day are the result of reflex disturbances caused by even a normal eye which is subjected to a long-continued strain, especially during the early development of the child and in the midst of poor hygienic surroundings. He pleads for

shorter hours at school and more outdoor exercise for the children.

**Photographing Gall-stones.**—Numerous attempts have been made to determine the presence of gall-stones by the use of the Röntgen rays, but authorities are generally agreed that it is impossible. Carl Beck (*N. Y. Med. Jour.*, Jan. 20, 1900) reproduces a number of successful photographs and gives an interesting report of the points upon which success depends. An important consideration is the time of exposure which seems to vary in different cases. He found that the longer the time of exposure the clearer the liver and the more obscure the calculi appeared. About five or six minutes seemed to give the best results, but this must be determined in each case. The most powerful focus tubes were used. It was also found essential that the patient should lie upon the abdomen with a pillow underneath his symphysis and clavicles. Another important point is that the rays shall not penetrate the abdomen in a vertical direction, but should form an angle of about forty-five degrees with the plate. A great deal also depends upon the composition of the stone, which is far more complex than that of renal calculi. Various experiments demonstrated that the calculi consisting of pure cholesterol give but an indistinct shade, while those containing quantities of calcium are well shown. The common biliary calculi are largely composed of cholesterol and hence are so permeable to the rays that only a slight shade is shown. Those calculi which consist of a compound of calcium and bilirubin, or carbonic acid, are very hard and are therefore distinctly brought out by the rays. It is thus found that only in selected cases can the demonstration of the presence of gall-stones be successfully made, but further experiments may improve the technic and furnish more valuable results.

**Psoriasis and Glycosuria.**—In spite of many attempts to connect these two diseases, the conclusions reached have never satisfactorily expressed the suspicions entertained by the investigators that there existed an interdependence between this skin affection and the presence of glucose in the urine. F. Nagelschmidt gives some interesting data bearing on this question in the *Berliner klin. Wochenschrift* (Jan. 8, 1900), which he obtained from personally conducted experiments. He based his experiments and made them hinge upon the question as to whether patients affected with psoriasis are more prone to glycosuria than are healthy people or people affected with other skin diseases. The persons experimented upon received in the morning on an empty stomach 100 grams of grape-sugar dissolved in 0.5 of a liter of water. Then the urine passed immediately before this ingestion, as well as that passed hourly for three or four hours after, was examined carefully. During this period all other food and fluid were proscribed. The tests used in the examination were the Trommer, the Nylander, and the fermentation

tests, together with the polariscope. Only those urines were declared positively as containing sugar which answered all of these tests. The experiments were carried out on 25 patients with psoriasis. The results were that 8 of these 25 (32 per cent.) suffered from alimentary glycosuria, whereas not one had a trace of sugar in the urine before the experiment. It can certainly not be said that this large percentage is a matter of chance only. At any rate, it offers a very interesting and instructive contribution to our knowledge of the matter in hand.

**Tinnitus Aurium.**—In a suggestive paper on this subject R. Panse of Dresden (*Archives of Otology*, vol. 28, Nos. 5-6) distinguishes two main groups of ear noises. (1) Low, dull ones, which preferably arise in the middle ear, like the resonance sound *C* of the ear drum after closure of the ear, or the muscle sound of yawning, or the vascular sounds heard during absolute quiet. (2) High, ringing ones, which arise from conduction into the labyrinth through the stapes, the fenestra rotunda, or the labyrinth watch. Panse discusses in particular a group of noises which do not interfere with hearing, the point of origin of which is surmised with difficulty. These he groups as: Conduction sounds; reflex sounds; tinnitus due to affections of the inner ear and nerve; blood sounds; sounds accompanying struma, atheroma, cardiac lesions, and anemia. His series of conclusions are as follows: (1) Almost all sounds should be designated by their pitch. (2) The pure conduction-sounds arise from the diminished outlet of sound, due to rigidity of the conducting apparatus. Inasmuch as the motility of the latter is required for hearing only low notes, its fixation is an obstacle to the outlet of these notes alone. Pure conduction-sounds are mainly placed between 16 and 256 vibrations. (3) The higher pitched sounds are due to processes in the inner ear. They may be produced (a) by reflex from the external meatus, middle ear, and many different parts of the body; (b) by changes in the inner ear or the nerve itself. In rare cases, however, low sounds may, perhaps, also originate in the middle ear. (4) Hearing of complex sounds like melodies, etc., is not prima-facie evidence of a cerebral affection. With reference to treatment, the rule is formulated not to perform any grave operations on the conducting apparatus when the sounds heard are high pitched, and especially not to attempt removal of the stapes.

**Cystotomy or Litholapaxy.**—Assendelft has had an extensive experience with stone in the bladder and reports the results of the treatment of 630 patients. In his opinion suprapubic cystotomy is the operation of choice for children up to the age of fifteen years, since litholapaxy in children requires the skill of the most expert specialist. He has been very successful with his operations in children, having a mortality of 1.8 per cent. in 327 operations on patients under twenty years of age. (*Archiv f. klin. Chirurgie*, vol. 60, p. 669.)

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SATURDAY, JANUARY 27, 1900.

## ELECTROLYSIS IN THE EUSTACHIAN TUBE.

EVERY practitioner of experience knows how obstinate to treatment and how hopelessly progressive are the cases of increasing tinnitus aurium and advancing deafness that follow catarrhal conditions in the nasopharynx. Many of them can be improved by the use of the Politzer bag and by careful treatment of the nose and throat. And some cases that have proved obstinate to these measures yield to the use of the Eustachian catheter and direct inflation of the tympanum after dilatation of the strictures with bougies. A number of cases remain discouragingly obstinate to all treatment, however, and these patients have had to face, with advancing years, the prospect of hopelessly progressive deafness.

The method of electrolytic dilatation of strictures of the Eustachian tube, reinvented by Dr. Duel and described at a recent meeting of the Harvard Medical Society of New York City (see p. 150 of our present issue), seems to promise, in these cases, at least an amelioration of symptoms ordinarily pronounced hopeless. The results secured by this method in some fifty cases are such as to leave little doubt that a new and valu-

able bit of operative technic has been added to the armamentarium of otologists. The persistence of the results secured by the new method, however, has not been determined.

The disappointing failure of a similar electrical treatment for strictures of the urethra is too recent not to be at once recalled by the introduction of electrolysis into otology. But it must not be forgotten that the conditions in strictures of the Eustachian tube differ decidedly from those in the urethra. There is very little surrounding soft tissue to be deeply affected and made cicatricially contractile by the electrolytic treatment. And there is no passage of irritating fluids over the dilated parts to add further to the irritative contractility of scar tissue.

Present experience includes some cases in which amelioration has persisted, with but slight modifications easily relieved by periodic inflation, for nearly two years. This seems to justify the hope in some unpromising cases that a really helpful therapeutic method, comparatively simple of application, has been discovered.

## THE TREATMENT OF ANEURISM.

THE physician who has a case of aneurism under treatment is apt to wonder at times if by treating his patient exclusively with drugs he is really giving him the best chance for the prolongation of life. Despite popular traditions to the contrary, many medical men share the very commendable sentiment of that grand old man of English medicine, Jonathan Hutchinson, who says that he looks back with most complacency on those cases in his medical career which he referred to others for treatment, because he thought they could do more for them than he could himself. Medical men would be only too glad, as a rule, to refer their cases of aneurism of the aorta to the surgeon, if there seemed to be a well-grounded hope for permanent relief by some operative procedure without a forbidding mortality. From the discussion of the subject before the Surgical Section of the New York Academy of Medicine (see p. —), it appears that as the result of recent American efforts in this line there is something more than a gleam of hope for even the most serious of these cases.

The much-lauded gelatin injection treatment from which, after the favorable French accounts, so much was expected, has proved a failure in other countries. The latest device, however,



which consists in the wiring of aneurism followed by the passage of a mild electric current, has given excellent results. Dr. Stewart's pioneer achievements in this work have proved a source of encouragement to the profession throughout the country. The recent investigation in thoroughly scientific spirit of the technic of the operative procedures made at Johns Hopkins, brings out clearly all the possibilities for good that this method possesses in the treatment of large aneurisms. It will be a matter for sincere regret if after the reported results more of these patients are not given the chance for radical cure which the operation affords.

How tolerant of the presence of foreign bodies an aneurism may be is well shown by Dr. Wyeth's case, reported at the same meeting, in which a score of harelip pins were used instead of wire. The preconceived notion of the danger of the operation, which has so far served greatly to limit its use, is evidently exaggerated. The prospect of relief not only from actually annoying symptoms, but also from most of the subsequent dangers of the aneurism, are amply sufficient to justify the risk involved. In many cases the resultant clot is so firm and becomes in time so thoroughly organized that it does not seem too much to speak even of radical cure.

#### THE TREATMENT OF INOPERABLE SARCOMA.

OFTEN the victims of sarcoma are at the very acme of apparent health and strength when attacked, and for modern medicine with all its vaunted progress to pronounce the cases hopeless has been a most mortifying experience. Extensive radical operations have done something during later years to remove this opprobrium, but much remains to be accomplished. In the midst of the general pessimism regarding cases in which recurrence has taken place, it is well to bear in mind that the surgeon's resources are not all exhausted after the use of the knife.

About a year ago we called attention to certain cases in this country and in England in which the sterilized toxins of erysipelas and the bacillus prodigiosus had undoubtedly been followed by permanent cure. In England especially the subject has attracted considerable attention during the last two years, and some extremely favorable reports have been made. In this country the pendulum of medical opinion, always going a little too far, has brought the profession to ignore

too much the possibilities of this method. The striking case presented by Dr. Coley at the last meeting of the Section on Surgery of the New York Academy of Medicine (see p. 154 of this issue) illustrates forcibly how a hopeless prognosis may sometimes be utterly undone by applying this treatment. A cure lasting nearly three years of microscopically diagnosed sarcoma, after a third recurrence, when metastases were already present, is indeed a surgical event deserving of attention.

The precise therapeutic mechanism of such cures remains a mystery. As in the cases in which severe infective processes lead to the complete disappearance of undoubted sarcoma, it is impossible to say what element is the curative factor or how the result is accomplished. A certain number of these cases reported by competent observers are met with constantly in medical literature. Dr. Wyeth gave at the same meeting of the Surgical Section the details of two such remarkable cures. The patients have remained well for eight and fifteen years respectively. We called attention some time ago to a similar case of Dr. Richardson's of Boston.

The subject is evidently worthy of most careful investigation. Meantime it must be borne in mind that inoperable cases of sarcoma cannot be pronounced hopeless, until the effect of bacterial toxins, or even of actual infection has been thoroughly tried.

#### ECHOES AND NEWS.

##### NEW YORK.

**New Advertising Methods.**—It is reported that Mrs. Minnie Maddern Fiske, the celebrated actress, has recently become a member of the New York State Antivivisection Society.

**New Brooklyn Hospital.**—Plans are preparing for the erection of a new building to replace the central section of the Long Island College Hospital. The new structure, which will cost about \$150,000, will be four stories high and fire-proof.

**Canned Foods.**—A bill has just been introduced in the New York Legislature providing that the year in which a can designed as a receptacle for foodstuffs has been made shall be impressed upon its bottom and sides.

**The Flower Hospital.**—Through the generosity of the widow and the daughter of the late Roswell P. Flower, the Flower Hospital has recently been the recipient of \$200,000. This was given on the condition that the name of the hospital should be perpetual.

**Dr. Hammond Revered.**—At a recent meeting of the Board of Directors of the New York

Post-Graduate Medical School resolutions of profound sorrow for the death of Dr. William A. Hammond were recorded, and expressions of respect for his memory were spread upon the minutes.

**Medico-Legal Society's Dinner.**—The Medico-Legal Society held its annual banquet and installation of officers on the evening of January 17th. Clark Bell, Esq., is the incoming president. The customary memorial to the English Government asking that clemency be extended to Mrs. Maybrick was sent.

**A Correction.**—In our last issue mention was made of the convalescence from typhoid fever of Drs. Pryor and Brown. By mistake Dr. Dillon Brown was mentioned instead of Dr. F. Tilden Brown. The former gentleman at last accounts was enjoying his usual excellent health. It is gratifying to know that Dr. Pryor and Dr. F. Tilden Brown are convalescing satisfactorily.

**Bellevue Employees Poisoned.**—Superintendent O'Rourke of Bellevue is investigating the strange illness of 180 of the hospital employees, who were poisoned at dinner on January 16th. The illness was mild in most of the cases, only one patient being obliged to take to his bed. Either some one poisoned the food, or accumulations of sediment in poorly washed cooking utensils generated a poison.

**Health Report.**—The Health Department presents the following report of contagious diseases for the week ending January 20, 1900: Measles, 777 cases and 28 deaths; diphtheria, 287 cases and 41 deaths; laryngeal diphtheria (croup), 10 cases and 11 deaths; scarlet fever, 245 cases and 13 deaths; smallpox, 1 case; chicken-pox, 33 cases; tuberculosis, 200 cases and 180 deaths; typhoid fever, 24 cases and 10 deaths; cerebrospinal meningitis, 4 deaths.

**The Bellevue Training School for Nurses.**—Twenty-three young women were graduated from the Bellevue Hospital Training School on January 16th. This brings up the total number since the foundation of the school, twenty-two years ago, to 614. Graduates are working in every part of the world except Australia. Three are in South Africa, one is on the hospital ship "Maine," and another is organizing the first training school for nurses in Cuba.

**Drug Clerks' Bill.**—The Assembly Committee on Labor and Industries gave a hearing on Tuesday, January 23d, on Assemblyman Maher's bill providing for shorter hours for drug clerks in New York City. Last year Mr. Maher had the same bill before the Legislature, and it passed, but at the request of the drug clerks, who came here en masse to protest against it, the Governor refused to sign the bill. The bill now provides that they shall not work more than 168 hours in two weeks.

**Smallpox Patient Abroad.**—William Brown, a negro from Virginia, after lodging three nights

in a tenement went to Bellevue feeling ill. This was on January 22nd. After sitting in the reception room of the out-patient department for about an hour, he was told that he had a trivial illness and was sent to the city lodging-house in Twenty-third street and First avenue. At 8 P. M. of the same day he returned to Bellevue and sat another hour in the reception-room, when his illness was diagnosed as smallpox. Wholesale vaccination and disinfection followed.

**Cigarette-Smoking by Minors.**—Although it seems to have been scientifically proved that cigarette-smoking *per se* when indulged in to a reasonable extent by adults is not injurious, it has been demonstrated with equal certainty that when practised to an excess, or at too early an age, it is destructive to health. Complaint has been made that the smoking-cars on the Brooklyn elevated road are frequented by boys under the age of sixteen years smoking cigarettes or pipes. The other passengers frown on the practise and sometimes the guard interferes, but there seems to be no systematic attempt to enforce the section of the Penal Code relating to children in this matter.

**Charity Inspection.**—To supplement the inspection work of the State Board of Charities, occasioned by the recent decision of the Supreme Court that the Gerry Society did not come under the provisions of the law, a resolution has been introduced at Albany providing for the appointment of five members of the Assembly to investigate the affairs of the Society for the Prevention of Cruelty to Children, and report to the Legislature before adjournment. The preamble to this resolution recites that the Society receives \$30,000 annually from the city of New York, and that no authentic information had been received as to the financial standing of the institution.

**Medical Ethics Observed.**—The secular press has during the past week given great prominence to an operation performed at the Seney Hospital in Brooklyn in which the lining membrane of the shell of a hen's egg was used as a skin graft for covering a large granulating surface. This is the first time in the history of surgery in the United States that the lining membrane of an egg-shell has been used for grafting purposes. The operation proved successful. It is especially noticeable in all these reports that the name of the operating surgeon did not appear. This was due to the fact that the surgeon insisted that the reporters should be given no information regarding the case except on the explicit understanding that his name should not appear. The reporters surprisingly kept their part of the agreement. There is no objection to the profession knowing, however, that this unique surgeon of these advertising times is Dr. George R. Fowler of Brooklyn, Professor of Surgery at the New York Polyclinic.

**Doctor's Diploma for Sale.**—Supt. O'Rourke of Bellevue Hospital recently made public a letter

which came from Detroit, addressed to "The Superintendent of Bellevue Hospital." It informs him that a graduate of the University Medical College has fallen into poverty and would like to sell his diploma. The writer says: "The only purchaser for such a thing, of course, would be some student who had failed to pass his examinations, or some man who, for business reasons, wanted a medical diploma and could not get one in the ordinary way; or some student who had gone part of his time to college and had to quit for some reason. As to the price, \$500 is less than half what it cost its owner to get it. Of course, it is worth more than that, particularly to a man who has failed and will have to give up altogether unless he can go home with a diploma." And this is added: "Fifty to \$100 that some one, yourself if you care to try for it, can make by selling it for my friend. If you don't care for it, can you give me the name of some one who would care to work up a customer for it? It occurs to me that some of those South American fellows who are always about the University and Bellevue might be a good customer for it." The letter was signed "H. J. Buttonbook, care General Delivery, Detroit, Mich."

#### PHILADELPHIA.

**Health Reports.**—Deaths in the city for the week ending January 20th were 525, an increase of 21 over those of last week and a decrease of 61 from the corresponding week of last year. Contagious diseases: Diphtheria, 145 cases and 26 deaths; scarlet fever, 102 cases and 4 deaths; enteric fever, 35 cases and 8 deaths.

**County Medical Society.**—The Philadelphia County Medical Society has elected the following officers for the present year: President, Dr. John H. Musser; first vice-president, Dr. G. E. Shoemaker; second vice-president, Dr. Francis Perkins; secretary, Dr. E. R. Kirby; assistant secretary, Dr. W. S. Wray; treasurer, Dr. C. L. Bower; censor, Dr. T. H. Fenton.

**Jefferson College.**—A decided innovation in medical clinics has been introduced by Professor Hobart A. Hare in his course at the hospital. Lantern slides illustrative and explanatory of the cases shown are thrown upon a screen by an assistant. Tabulated charts, as well as photographs, are included. The scheme is heartily endorsed by the students.

**Hospital for Contagious Diseases.**—A pay hospital for contagious diseases has recently been chartered and the incorporators have elected officers for the year, the president being Hon. William N. Ashman. Efforts to secure a building are being made, the Women's Branch of the Board having announced a bazaar at Hotel Walton February 7th in aid of the movement.

**Pediatric Society.**—At a meeting held January 9th Dr. Griffith stated his disagreement with writers who associate miliaria with severe rash in scarlet fever. Four cases were reported in which

miliary eruption was present with only ordinary intensity of the rash. He believes that there is no relation between feeling and the miliary eruption; that the latter is due to a peculiarity of the skin, and that its appearance is no indication of a severe attack of scarlet fever.

**Consumptive Poor.**—The treasurer of the Free Hospital for Consumptives reports that an expenditure of \$7,000 was made in caring for the consumptive poor during the year just closed. This hospital association has not yet obtained a special hospital for these patients, but efforts are being made to establish one. Meanwhile the association endeavors not only to alleviate the suffering from consumption itself but also that entailed by the abject poverty which inability to work brings to many unfortunates.

**School Hygiene.**—The Committee on Hygiene of the Board of Education has been revived and announces its intention of exercising a careful supervision of the schools. Plans for new buildings and improvement of old ones are subject to their approval. The necessity of the Board employing an inspector with a thorough technical training is to be emphasized and is a move in the right direction. The Women's Sanitary League has presented a petition asking that there be introduced in the schools instruction regarding the dangers arising from expectoration.

**Water Filtration.**—The season of freshets has begun and the water supply of Philadelphia, always bad, is periodically an indescribable mixture. However, as our great and only Munyon says, "There is hope." The Finance Committee of City Councils has reported favorably on the bill authorizing a \$12,000,000 loan for filtration purposes and the bill will undoubtedly become a law. Experts have already submitted a report on various methods and purer water is assured—for posterity, at least. In the meanwhile the long-suffering Philadelphian will continue to take his *aqua pura* fried on one side or turned, as his fancy may dictate.

**Antinomycosis.**—At a recent meeting of the Pathological Society Dr. Simon Flexner exhibited the lungs taken from a woman dying of the above disease. She had a cough for many months, pain in the chest, particularly the right side, followed by a swelling which broke down and left a sinus. Examination of the pus from this sinus showed the presence of actinomyces grains. The main lesions of the lungs were in the lower lobes, the consolidated areas extending nearly through the organ. In addition to the principal foci, fragments of mycelial threads were scattered throughout the lungs. At first these were thought to be due to some other organism but none was found and the actinomyces is believed to have caused this diffuse appearance as well as the foci.

**Sweat Shops.**—The factory inspectors of the city are determined to put a stop to the making of clothing in the slum tenements where contagious diseases are known to exist and the sweat-



shop law is being rigidly enforced. Last week a house in a locality where diphtheria and scarlet fever were known to exist was visited and over 200 pairs of trousers found there were condemned and sent to the Municipal Hospital where they were destroyed. The owner of these goods made a vigorous protest, as he was about to send them away to various stores. The house contained about 25 people and among these were found two cases of diphtheria and one of scarlet fever. Other manufacturers are being watched and violators of the law will be prosecuted.

**Pennsylvania Hospital Clinics.**—Dr. J. M. Da Costa recently exhibited a case of spastic paraplegia of congenital origin, it being the first case of that rare variety which this experienced clinician has seen. The history of the patient, a boy eighteen years of age, was carefully investigated and absolutely nothing pointing to cerebral involvement after birth could be elicited. This, together with the fact that the patient's sister had the same disease, was believed to make the case a perfectly clear one of the congenital variety.

Dr. A. V. Meigs believes that the bacteriological diagnoses made in the laboratory of the Board of Health from throat cultures sent them by physicians are often contrary to clinical facts. For this reason the posters put upon houses where contagious diseases are supposed to exist may be the source of needless annoyance and damage to many families. In his private practise he does not send cultures to the Board of Health, preferring to keep his patients under his own control. He advises that in a case presenting difficulty in diagnosis a culture be sent to a reliable private laboratory for examination. This gives the benefit of a bacteriological test while the physician still controls the case, can make his own diagnosis, and can say when his patient is well without being interfered with.

**Examination Frauds.**—The investigation by the State Medical Examiners regarding the fraudulent obtaining of questions by applicants for license at the meeting of the Board in this city in July, 1899, is still under way. The State printer, his foremen, and employees have appeared before the Board and the unsavory affair is to be thoroughly probed. The questions used at the meeting of the Board in December were read to the candidates instead of being printed, and the fact that of the 83 candidates from regular schools 35 failed is considered significant.

Philadelphia physicians denounce the action of Gov. Stone in failing to reappoint to the Board Drs. J. K. Weaver of Norristown and S. W. Latta of Philadelphia, whose terms recently expired. These men have been among the foremost in efforts to raise the standard of the medical profession and were especially active in advocating the strict interpretation of the four-year law and in pushing the investigation of the rumored examination frauds. No objection to their successors is raised, as they are men of unques-

tioned ability, but it is felt that the retirement of these two men at this critical time is a serious loss to the Board. Politics of the inimitable Quay brand is thought to be at the bottom of the change. However this may be, at least one of the new members has pledged his hearty support in furthering the investigation now being conducted. The finding of the Board is being anxiously awaited.

#### CHICAGO.

**Meeting of State Board of Health.**—The State Board of Health held its quarterly examinations at the Great Northern Hotel, January 16th. On the first day there were 43 candidates who took the examination for degrees; 18 for degrees in osteopathy, 11 for physicians, and 14 for midwives.

**Emergency Hospitals.**—A delegation of women physicians visited President Irwin of the County Board, urging the establishment of an emergency hospital in the First Ward, and explained to him that they believed such a hospital should be provided in every ward. The plan meets with the approval of Mr. Irwin, but he thought the matter should be taken up by the City of Chicago and not by Cook County. He thought the County was in no condition financially to add to its burdens.

**Death of Dr. Hoadley.**—Dr. Albert E. Hoadley, who had practised medicine in Chicago for twenty-eight years, died January 16th, from fatty degeneration of the heart. He was born at Chenango Forks, N. Y., on November 19, 1847. He graduated from the Chicago Medical College in 1872, and he was professor of orthopedics and clinical surgery in the College of Physicians and Surgeons, a member of the local societies, and likewise a member of the American Medical and American Orthopedic Associations.

**Medical Inspection.**—The medical inspection of schools inaugurated by the Board of Education resulted in the examination of 3054 pupils last week, of whom 323 were excluded from schools because of the danger of infecting other pupils. The Commissioner of Health gives his opinion that this protection to the school children must result in the prevention of much sickness and suffering and will save the lives of many who otherwise might die from contagious diseases.

**Wesley Hospital.**—The new \$250,000 Wesley Hospital, for the building of which \$150,000 has already been subscribed, will be under the management of the present building committee and the Deaconess Society. The medical staff will be composed of both regulars and homeopaths.

**Diploma Mills.**—The Secretary of the Illinois State Board of Health is reported as saying that academical Europeans cannot be persuaded that in Chicago degrees are not turned out by the diploma mills "as fast as they kill hogs." If the

degrees were only as genuine as the hogs, no one could complain.

**Estimates for Health Department.**—Health Commissioner Reynolds has asked for \$256,894 to run his department during the year. The largest amount requested is \$60,034 for maintenance, supplies and contingent expenses. This item includes the Isolation Hospital, public vaccination, antitoxin treatment, stationery, printing, disinfection, chemicals, and laboratory supplies, transportation expenses for disinfectors and inspectors, as well as \$4,200 to complete and \$7,500 for the extension of the Robert A. Waller bath. The chief increases asked by the Health Department are in the contagious disease division, where the force of medical inspectors and disinfectors has been increased from ten to twenty, an addition of \$19,000.

**Vital Statistics.**—Deaths for the week ended January 13th were seven fewer than the week preceding and forty-six less than in the corresponding week of 1899, according to to-day's weekly bulletin of the health department. Pneumonia and bronchitis together caused 129 of these deaths, or slightly more than 23 per cent. of the total. This is a small reduction compared with the preceding week, but a marked reduction compared with the corresponding week of 1899, when pneumonia was responsible for 127 deaths and bronchitis 31, a total of 158, or 28 per cent. of the total mortality. For the corresponding period of 1899, influenza was responsible for thirteen deaths, while for the week just closed there was but one death attributable to this cause. During the week there were five fewer deaths from diphtheria than in the preceding week, and an increase of one from scarlet fever. The mortality from both these diseases is still excessive.

**First Voyage Down the Drainage Canal.**—A twenty-eight mile trip from Chicago to Lockport, over the drainage canal, in a row-boat, by a reporter of *The Times-Herald* staff a day or two since revealed that beyond Kedzie Avenue, in this city, to Lockport, the water is practically free from offensive odor; that foul masses of city sewage are not flowing down the channel in such form as to menace health or life anywhere; that the sewage in the stream is in saturation, gives ample evidence of disintegration and aeration, and that water discoloration in the main channel is due less to the presence of sewage than to seepage along the earth sections. No great surface indication of the presence of poisonous filth could be found. The current moves at a rate of between one mile and a quarter and a mile and a half an hour, and the water is rapidly clearing. The channel is easily navigable, the present water-depth being twenty-five feet, and there is no offense to nostril or eye in any portion of the trip.

#### GENERAL

**The "Maine."**—The American hospital ship "Maine," which left England December 23rd,

arrived at Cape Town January 21st and proceeded to Durban January 25th. All were reported well and everything satisfactory.

**A Medical Journal Suspends.**—The *South African Medical Journal*, published at Cape Town, and many of whose subscribers reside in the Orange Free State, Natal and Transvaal, announced with its December issue that it would discontinue publication for six months.

**Pure Food and Drug Congress.**—The third annual meeting of this national assemblage will be held at Washington, D. C., March 7 and 8, 1900. This national organization is making strenuous efforts to have the National Pure Food bill passed by Congress.

**Eddyites Indicted.**—The Grand Jury of Council Bluffs, Ia., recently returned true bills of indictment against two followers of Mrs. Eddy, on the charge of being criminally responsible for the death of a young woman under their care who was sick from appendicitis.

**Typhoid in Trenton.**—There is a quite unusual epidemic of typhoid fever in the city of Trenton and its suburbs. The number of cases has grown from the average of twelve in a week to forty. The outbreak is generally attributed to the city's new reservoir.

**Obituary.**—Dr. Abram H. Wittmer, first assistant physician at the Government Hospital for the Insane at Washington, died on January 18th, in his fifty-fifth year. He was connected with the Government Hospital for over twenty years, and was a member of a number of prominent medical societies.

**Vaccination in Connecticut.**—During 1899 there were, according to the report of the State Board of Health, but three cases of smallpox in Connecticut. This immunity is attributed to the thorough manner in which vaccination has been done in the public schools, and to the wise and effective legislation which permits the exclusion of unvaccinated pupils from the schools.

**Another Gift.**—Mr. James Stillman of New York City, who recently gave \$50,000 to Harvard University for the purpose of establishing a hospital and infirmary for sick students, has doubled the amount. The advance in the price of real estate and building materials has necessitated this additional sum in order that the original plans might be carried out.

**Cuban Prisons.**—Major Runcie, who has been officially investigating the conditions of the prisons in Cuba, describes the women's prison as a den of filth and iniquity; he did not find a cot, a blanket, or a female attendant in the prison, where several hundred women are confined. The sanitary conditions are almost indescribable. This state of affairs is the worst arraignment of Spanish mismanagement that has yet been discovered.

**Mules Vaccinated.**—The British Admiralty has issued a decree that the American mule must

be vaccinated before he can enlist in the British army service in South Africa. This action was due to the fact that a large number of mules have died of glanders since their arrival on African soil. In the future all mules designed for South Africa will be inoculated with antiglanders serum or virus in this country before embarkation.

**Dr. Conan Doyle.**—Our professional brother across the water has experienced a change of heart since he presided at a peace meeting some eight months ago, and now declares that he has seen more positive virtue in Great Britain during the last few months than he had seen during the previous forty years. He regards President Kruger as a benefactor of the British Empire, and suggests that a monument be erected to him as large as St. Paul's cathedral, putting Oom Paul under it and inscribing upon it: "To the memory of the man who federated the British Empire."

**The Plague.**—The steamer "Doric" which arrived January 19th at San Francisco from Asiatic ports, via Honolulu, reports a fresh outburst of the plague, six deaths having occurred within a week. This brings the total number of deaths up to 18. It is understood that there are 26 cases in the hands of the health authorities. Surgeon-General Sternberg has received a cable from Major Blair Taylor, chief surgeon of the United States Military Hospital at Honolulu, reporting three additional cases and one death. He believes that the disease will be eradicated by the energetic measures used. The Honolulu Board of Health has \$270,000 at its disposal, and has destroyed by fire the houses of the infected district. Reports from Buenos Ayres, Argentine Republic, January 24, announce that the plague has invaded Rosario, but that a vigorous cordon has been established.—The epidemic in India continues to spread among the famine-stricken populace but no new centers of invasion have been reported.

**Dr. Howard A. Kelly Snake-bitten.**—In the course of a lecture, on January 22nd, Professor Howard A. Kelly of Johns Hopkins was bitten by a rattlesnake, which he was exhibiting. With great coolness he sucked the wound for a minute, told his horrified audience there was no occasion to be disturbed, and continued to talk for over an hour. There was very little poisoning. The biting occurred while the doctor was returning the rattler to its cotton sack. As soon as he removed his hand the snake struck, sending its fangs through the sack and into the flesh. On this account the bite was not so virulent as it might have been. Dr. Kelly has been making a study of snakes for a number of years and he anticipates publishing a work on the reptiles of North America. He has a large collection, procured in various sections of the country, including the rarest specimens known to naturalists.

## NOTABLE BOOKS.

"DIE KRANKHEITEN DER LEBER" (DISEASE OF THE LIVER).<sup>1</sup>

"SYSTEM DER BACTERIEN."<sup>2</sup>

DISEASES of the gall-tracts have attracted so much attention recently that this contribution to our knowledge of liver diseases cannot fail to be of more than ordinary interest. It has been claimed that most of the diseases of the liver belonged rather to the surgeon than to the medical man. We need only recall the fact that for atrophic cirrhosis, especially when complicated by ascites the most successful treatment is suture of the liver to the belly wall with the consequent formation of adhesions, the development of a collateral circulation, and the relief of the obstruction in the circulation. Of late, gall-stones have been claimed to be from the beginning a surgical and not a medical affection. Abscess of the liver is now opened as soon as diagnosed. No palliative treatment is considered justified for a moment and even the trocar methods of emptying the purulent collection are finding less and less favor.

It is interesting then to find a recent book in which the medical aspect of liver disease is considered and in which the serious problems connected with the diagnosis of affections of the liver are put as clearly as is possible with our present knowledge of the pathology of that organ. The extent to which our knowledge of liver disease has broadened in this last half century is very strikingly displayed by one fact. The old morbus regius, or jaundice, which had fifty years ago practically an independent existence, is now considered a symptom of a very large number of different affections. Psychic icterus is a thoroughly established etiological division of the disease which a few years ago was very little considered. Icterus menstrualis, a jaundice occurring during the menstrual period and without any special pathological change to account for it, is another interesting type of the disease. A form of icterus that has received a good deal of attention during recent years is that following the ingestion of various poisons. It has been noted that even such familiar drugs as ether, chloroform, chloral hydrate and certain arsenical preparations may furnish occasion for the development of jaundice.

The chapter on cholelithiasis, written by Hoppe-Seyler, is deserving of special attention because of the present widespread interest in the whole subject of gall-stones and their treatment. Much more importance is placed on the wearing of corsets as a cause for gall-stones than is usual. In addition to the corset, there are in women two

<sup>1</sup>"Die Krankheiten der Leber" (Diseases of the Liver). By Professors Quincke and Hoppe-Seyler of the University of Keil. Vol. XVIII, part I., Specielle Pathologie und Therapie; edited by Professor Nothnagel of Vienna. Vienna: Alfred Hoelder, 1899.

<sup>2</sup>"System der Bakterien." Handbuch der Morphologie, Entwicklungsgeschichte und Systematik der Bakterien. Von W. Migula. Gustav Fischer. Jena. 1900. Zweiter Band.



other causes that are supposed to lead to gall-stones, *vis.*, pregnancy and an indoor life.

For those who delight in statistics, the number of gall-stones that have been found in certain cases is of interest. In one of the gall-bladders of the Otto collection 7802 gall-stones were counted. Naunyn found in one gall-bladder over 5000 gall-stones, and Friedrich Hoffman reports a case in which 3642 were found. It is not an unusual thing to find gall-stones of different composition in the same gall-bladder. Hein who investigated 632 cases, found 28 instances in which the stones were of unlike composition.

Syphilitic hepatitis is considered here to be a much more important affection than is usual, and the authors write that cirrhosis and syphilitic disease of the liver are often confused in diagnosis. Sometimes the resemblance between a multiple gummatous cirrhosis and an ordinary cirrhosis of the liver is very striking. Where remissions occur, especially where the ascites comes and goes irregularly, and where the disease runs a course of several years, the cirrhosis is usually syphilitic. These are the cases of so-called cirrhosis of the liver which recover.

Syphilitic affections of the liver, as is well known, occur not infrequently in very young children as the result of heredity. Clinically this condition is often missed, yet the diagnosis of the affections is not at all difficult, since the liver in young children can be readily palpated and other liver affections are very rare. Many of the digestive disturbances in young children with syphilitic heredity are due to affection of the liver. Many of the cases of marasmus of doubtful origin are to be attributed to syphilitic hepatitis.

According to the authors, a true biliary cirrhosis, due to the destruction of the liver-cells by the irritative presence of bile and the overgrowth of the connective tissue, is possible but is very infrequent. As to the other form of so-called biliary cirrhosis, they say very properly that it is a misnomer and that it should properly be called cirrhosis cholangica. The sclerotic condition is not due to the biliary secretion, but only begins in the tissues of bile-ducts.

Two years have gone by since Migula wrote the first volume of his work on bacteriology. It was then seen that an entirely new influence had entered this field. Hitherto, with but few notable exceptions, the bacteriological domains had been given over almost entirely to the student of the medical sciences. Physicians, surgeons, and hygienists were eager in the work of new discoveries in this line and it was not until Migula first published in Engler and Prantl's "Die Natürliche Pflanzenfamilien," a chapter on the lower fungi, treating of the bacteria, that the strictly botanical hand made itself apparent. This second volume serves to accentuate this strictly systematic mode of treatment and also, in part, crystallizes a number of hazy conceptions pertaining

to the relationships of the different genera treated.

As far as the medical world is concerned, the old grouping into pathogenic and non-pathogenic organisms, is sufficient for all practical purposes, but the student of natural science, botanist or zoologist, in one field of research at least, is impelled, by the well-known mania for classification, to arrange his objects of study in some logical order. In this volume of 1080 pages, with eighteen tables and thirty-five figures in the text, Migula has given a comprehensive botanical classification of all the then described species and has tried to bring some order out of the chaos of bacterial nomenclature.

His classification follows the lines already laid down in "Die Natürliche Pflanzenfamilien," and is here given in an abridged form. The bacteria are divided into two large groups, the Eubacteria and the Thiobacteria; the former are characterized as bacteria containing no central body (nucleus?), sulphur, nor bacteria purple; colorless or lightly tinged, sometimes green like chlorophyll; the latter as bacteria containing no central body, but possessing sulphur and bacteriopurpurin, colored red, or pink or violet, never green. The families are the (1) Coccaceae, with the genera, Streptococcus, Micrococcus, in which is included the various forms of Diplococcus and Staphylococcus, Sarcina, Planococcus and Planosarcina. (2) Bacteriaceae, containing the genera Bacterium, which is raised to a generic rank, Bacillus and Pseudomonas. The separation of these three genera is based on the flagella. The species of Bacterium do not possess flagella and are non-motile, those of Bacillus are motile and possess numerous flagella, covering the body of the bacteria; while the forms of Pseudomonas are motile, but the flagella are collected at the ends. (3) Spirillaceae, made up of the genera, Spirosoma, Microspira, Spirillum and Spirochaeta and (4) Chlamydobacteriaceae. In this family the bacteria are rod-like and elongated into threads, which threads are surrounded by a sheath. Reproduction is effected by means of spores or conidia which may be motile or non-motile. The genera and species of this family are few and are imperfectly known. Chlamydothrix, Crenothrix, Phragmidiothrix and Sphaerotilus are the genera.

The Thiobacteria represent but few forms, when compared with the Eubacteria, occupying but ten pages of the 1050 devoted to the study of the bacteria. This genera and species are unimportant from the medical point of view. Most of the species are inhabitants of salt and fresh waters.

From the above brief discussion it might appear that this work would prove of interest to biological students alone. This is far from the truth and it should be known to every working bacteriologist as it may be said to be the first serious effort made to bring the vast mass of known bacteria into some sort of systematic order.

## CORRESPONDENCE

## OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, January 13, 1900.

DEATH OF SIR JAMES PAGET—THE "BOY PROFESSOR"—EARLY SUCCESSES—HUNTERIAN ORATION—FUNERAL IN WESTMINSTER ABBEY—BRITISH PHARMACOPEIA BEFORE THE COURTS—CHRISTENING AS A THERAPEUTIC AGENCY—SEATS FOR SHOP-WOMEN—SPREAD AND FATALITY OF THE INFLUENZA IN LONDON.

WIDESPREAD is the grief of the profession over the passing, with the last days of the old year, of one of the foremost surviving figures in English medicine. Sir James Paget had been for several years completely withdrawn from both the practise and the active interests of the profession, having been confined to his house, indeed, for the most part to his room, by the weaknesses incident to old age, but his influence and his memory were still fresh and powerful, his sick-room was a center of reverent sympathy, and the news of his departure comes with the shock of bereavement. To enumerate his triumphs and matchless services to surgery would be superfluous, the name of Paget, coupled with the classic "Lectures upon Surgical Pathology," is a household word in the profession and the work a classic and an authority still in spite of the half century which has elapsed since its appearance. And it was written by a young man of barely thirty-three, against whose appointment to deliver the lecture-courses of which it is made up, the protest was raised of "setting a boy to teach us surgery." The lectures established his fame at once and from this time on his career was one steady procession of honors. Warden and surgeon to St. Bartholemew's Hospital, where his great teaching-work was done, Fellow of the Royal Society, President of the College of Surgeons, Baronet, Surgeon to the Queen and Prince of Wales, these are a few of the milestones of his progress. He was even more beloved than famous. Gentle, modest, courteous to all, in his successes, as in his early struggles, he was one of Nature's noblemen and his baronetcy was literally "but the guinea's stamp." Seldom has a more brilliant audience assembled to do honor to any member of our profession than that which listened spellbound to the eloquence of his Hunterian Oration in 1877. From the Prince of Wales to Professor Huxley, from Mr. Gladstone to the Marquis of Ripon, leaders in every field of activity were present. Although half a generation has passed since then and many of that brilliant company have joined the majority meanwhile, yet so enduring was his fame that his funeral services in Westminster Abbey yesterday were attended by hundreds from all walks of life, who strove to do him honor. Wreaths were sent by the Queen and the Prince and Princess of Wales, who were also personally represented, and

the pall-bearers were headed by Lord Lister and Sir Michael Foster. Seldom does a member of our retiring and little-celebrated profession attain such widespread fame.

That memorable document, the British Pharmacopeia, has been before the courts this week and on the whole came out the worse for the ordeal. A certain druggist was summoned by a zealous medical officer of health for selling a compound rhubarb powder which on analysis was found not to conform to the B. P. standard, containing only 30 per cent. of magnesia, instead of the required 60 per cent. This certainly seems a harmless enough variation and one can hardly wonder that the magistrate refused to convict, but his grounds went further than this. He declared that the British Pharmacopeia had no legal status whatever as a standard of genuineness in drugs or compounds, and that unless a drug was called or purported to be made according to the B. P. standard, it could not be held to or judged by that standard. This is unquestionably sound law and good sense, especially in view of the trivial nature of the departure from the standard formula and yet it certainly would be desirable in some way insure that staple and commonly used compounds, such as the familiar rhubarb, licorice and opium "compounds," whose names in themselves mean little that is definite, should be held to a rather rigid standard of uniformity. And this would naturally and most conveniently be that of the British Pharmacopeia.

A strange and ghastly instance of the power of superstition even in these later days was furnished by an inquest held by Mr. Braxton Hicks this week upon the body of a baby seventeen days old. The autopsy showed death to be due to bronchopneumonia. The mother gave the extraordinary evidence that the child was ill on Wednesday, worse on Thursday, *so on Friday she took it to church to be christened!* Saturday morning it died. And this in the rawest, foggiest month of the year and an unusually bad month at that. Mr. Hicks remarked that he had had several similar cases before him during the past few years, children seriously ill, taken to be christened and dying in consequence. The explanation, of course, is simple. There is a firm belief, actually taught by the clergy until comparatively recent times, that the souls of infants dying unbaptised hover forever between heaven and hell; so that devout parents would risk much for their infants in this life to ensure their welfare in the next world, even at the hazard of hastening their departure thither, and the poor little victim is christened for its own funeral.

The new Act compelling merchants to provide seats for their shop-girls and women employees, which came into operation with the New Year is cordially hailed by medical men. Curiously enough its original introducer, Sir John Lubbock, was raised to the Peerage on the same day. The Act has had excellent effects already, as many of the better class of shopkeepers have pro-

vided their stores with seats for some time past, some since immediately after its passage and without waiting for the date when it should become actual law. The requirement is one seat for every three assistants, and ought to result in the saving of much suffering and even permanent disabilities and displacements.

Much uneasiness is felt over the continued spread of the influenza and fears are expressed that a serious epidemic like those of 1891 and 1893 is in prospect; indeed, the record already is higher than any previous November and December except in those two years. *One hundred and ninety-three* deaths attributed to influenza in one week is certainly enough to alarm us, especially now that "influenza" as a formal cause of death is handled so much more cautiously than in earlier years. This is evidenced by the huge death-rate from respiratory diseases, nearly 600 above the corrected average for the week for the past ten years, chiefly from bronchitis and pneumonia. So far the pest itself, although very widely spread, is of rather a mild type and presents no new features; indeed, it had so many varied ones before that there seem none to present.

#### TRANSACTIONS OF FOREIGN SOCIETIES.

##### English.

OUT-OF-DOOR TREATMENT OF CONSUMPTION—  
PROGNOSIS OF APPENDICITIS—SURGICAL TREAT-  
MENT OF ASCITES—SENILE TUBERCULOSIS—  
TWELVE CONSECUTIVE CASES OF PERFORATED  
GASTRIC ULCER.

IN a discussion on the out-of-door treatment of consumption at a meeting of the Royal Medical and Chirurgical Society, November 28th, Heron called attention to the almost universal approval of this method. It is certainly very unusual that any form of treatment should be so widely advocated for two years without a single dissenting voice in the profession being raised. A life out-of-doors, either of amusement or occupation, plenty of wholesome food, and a bedroom arranged so that the patient is practically sleeping out-of-doors without being subjected to drafts, is a day's program that any man of common sense can follow out without going to a sanatorium. The speaker mentioned several instances in which patients have been able to earn their livelihood near home by doing the work of a gardener, land agent, pedlar, etc., although these occupations were quite new to them at the start. Such employment, or, if circumstances permit, the playing of fives, cricket, golf, or some other game, or skating or rowing, is far better for the patient than merely walking up an incline, and then walking down again. Many patients are annoyed by being required to make daily visits to their doctor. If all is going well, there is no necessity that a patient with incipient tuberculosis should see his physician oftener than once in ten days.

J. E. Pollock said that the mortality from phthisis in 1838 was 38 per 1000 of persons living, while in 1892 it was 14 per 1000. The health of the whole population has improved, and some diseases have been extinguished, not on account of any special treatment, but because of better sanitation, better dwelling and increased comforts of the whole people. In the Brompton Hospital for Consumptives, the results will compare favorably with those obtained on the Continent or elsewhere. Very little medicine is given, but the rooms are airy and well ventilated, for an abundance of pure air is supplied, which is heated by passing over pipes. The temperature is kept at 60-63° F., winter and summer, and the patients are encouraged to stay out of doors as much as possible.

F. G. D. Drewitt called attention to the fact that in the zoological gardens granivorous birds die in large numbers from tuberculosis, while meat-eating and fish-eating birds die much less frequently from that disease. Carnivora rarely die from tubercle, but caged animals do, whatever their dietary. The conclusions are obvious that human beings close-housed and fed largely upon starches will be especially susceptible to the ravages of consumption.

P. Weber agreed with the last speaker as to the value of proteid food for the consumptive. Men who have a tendency to gout, and who take large quantities of meat, are less likely to suffer from consumption than poorer people who cannot afford an excessive meat diet. Experiment showed that if a certain number of dogs are infected with tubercle and then fed some on meat and some on farinaceous food, those fed on meat are less prone to develop tubercle than the others.

In closing the discussion, K. Fowler spoke of the great difficulty in getting medical men and patients to realize the length of time required to bring about an obsolete condition of the lesions. The word cure should never be used, or only after finding out what meaning the patient attaches to it. It is seldom true that all physical signs disappear, unless reference is had to adventitious signs alone. These were as a rule absent from arrested lesions, although when emphysematous changes have taken place around a fibroid lesion, a few bubbling râles may remain.

At the meeting of December 12th, S. Martin said that the slow growth of tuberculous lesions, the prolonged vitality of tubercle bacilli in animal tissue, and the very problematical formation of antitoxic substances in the patient infected by tuberculosis, are in strong contrast to some of the acute infectious diseases. Mankind must be considered relatively immune to tuberculosis. The bacillus certainly tends to become quiescent. One of the most important questions in connection with the treatment of tuberculosis is that of secondary infection, either by the streptococcus, or by the bacillus of influenza, or in children by the agents of acute infectious diseases. To prevent secondary infection is one of the objects of treatment by fresh air, and in sanitary surroundings.



The dissemination of knowledge concerning tuberculosis has done good in several ways. It has led to the taking of measures for the destruction of the sputum, and the disposal of clothing soiled by the patient. It has also led to the protection of the alimentary tract by greater attention to the health of cattle, and by the boiling of suspected milk. Physicians have also learned that a tuberculous patient who has fever must be kept at rest like any other febrile patient; and that a patient ill with tuberculosis must be intelligently treated, and not sent on long voyages in a haphazard way, in the hope that change of climate may effect a cure. An excess of food may be of advantage to repair waste of tissues, but in this respect judicious feeding rather than over-feeding should be the rule. A change in the life of the patient, even without a change of locality, may be the turning point toward recovery. In the houses of the well-to-do this can be accomplished without sending the patient to a sanatorium.

At the Medical Society, November 27th, Caley opened a most interesting discussion of the prognosis of appendicitis. In the medical and surgical wards of St. Mary's Hospital, 200 consecutive cases of appendicitis were treated. There were 99 cases of simple appendicitis and perityphlitis—that is, cases in which the peritonitis was localized and non-suppurative. All of these patients recovered. In 31 cases there was localized suppuration, and of this class 2 patients died. In 23 cases there was general peritonitis, and of this class 20 patients died, many of them being, it is true, in a hopeless condition when received into the hospital. There were 42 cases of chronic and relapsing appendicitis, in 37 of which the appendix was removed. All of the patients of this class recovered. For prognostic purposes the lesions of the appendix may be considered as severe and mild. The severe lesions are perforation, gangrene, ulceration, and sometimes concretion and suppuration within the appendix itself. Most of the fatal cases are associated with perforation and gangrene. Mild lesions are simple inflammation, whether acute or chronic; stenosis or obliteration of the lumen with or without cystic dilatation of its distal portion; some forms of concretion; superficial ulceration; kinking; volvulus, or extensive adhesions. Most chronic cases present these symptoms, which are mild as far as the probability of an extension of the peritonitis is concerned. Persistent severe pain or vomiting, or a sudden return of pain or vomiting after an interval of quiet, are symptoms which almost always indicate a severe case. The same may be said of a pulse persistently above 120, or an initial collapse, even if it is soon succeeded by a more comfortable period. The prognosis for recurrence has been variously given at from 30 to 47 per cent. In Caley's cases it was 31 per cent. Usually the second attack comes within a year, almost certainly, if at all, within two years. There will surely be a recurrence if there is persistent pain and local thickening.

Berry spoke against a hasty incision in acute cases. In 24 acute cases, treatment was by free incision. Five patients recovered and 19 died. In 21 strictly comparable cases the expectant method of treatment was employed, to be followed by limited incision. Nineteen patients recovered and 2 died. Under the charge of another surgeon, 9 similar cases were treated by free incision. Of these patients 7 died. In 20 other cases a late limited incision was made, and none of these patients died.

G. R. Turner read a paper on the surgical treatment of ascites at the meeting of this society held December 11th. Two patients were operated on by him. In one of them the upper and under surface of the liver was scratched, and the liver was stitched to the abdominal wall. In the other case, in addition to these procedures, the omentum was stitched between the liver and the parietes. This patient recovered, while the other was scarcely benefited, and when heard of four months later he had been tapped several times, and was then in bed with ascites of an extreme type. The patient who recovered was for some weeks troubled with pain in the region of the liver, and his spleen remained large for several months. The author of the paper insisted on the advantage of an early operation before the liver tissue had so degenerated that it cannot hypertrophy after the establishment of additional circulation. He favored an incision along the costal margin, and the introduction of the omentum between the liver and the abdominal wall.

At the Clinical Society, November 24th, Marsh read a paper on senile tuberculosis. He gave the history of a patient who at the age of 71 developed a suppurative arthritis of the left ankle. This was at first drained, but afterward extended up the leg so that amputation had to be performed. Then the right foot had to be taken off, for a similar affection of the ankle. Later the right knee-joint became affected in a similar manner, and amputation was performed through the thigh. These three operations were performed in a period of four years. Since then two years have elapsed in which there has been no further trouble. The disease in each joint evidently began in the synovial membrane, and led to complete destruction of the ligaments and cartilages. Marsh regarded this case as one of senile tuberculosis, a disease which in the aged has a tendency to remain localized, and has therefore a favorable prognosis.

At the meeting of December 8th, Barker made a communication based upon twelve consecutive cases of perforated gastric ulcer in which he performed operation. Five of the patients recovered. One died as a result of hemorrhage from the ulcer into the stomach. From this accident one might conclude that the ulcer should be excised, but it is evidently not a common accident, since this was its only occurrence in his experience. Wiping the abdomen, especially the under surface of the diaphragm, he preferred to flushing. Drainage was employed

only once, and then was not of any service. It was remarkable how slight the premonitory symptoms were. Several of these patients had complained of indefinite gastric pains only previous to the perforation; three gave a history of vomiting and two of hematemesis. In the five successful cases the interval between perforation and operation ranged from six to eighteen hours; while in the fatal cases it ranged from twenty-eight to seventy-seven hours. As to the diagnosis, there was in every case epigastric pain, but it varied in character. Collapse was present in only six cases. It seemed to depend on the character and amount of the extravasated fluid. Liver dulness was not always absent. The remote results after operation were good. In only one of the five patients were there symptoms which seemed to threaten a recurrence of the perforation.

## SOCIETY PROCEEDINGS

### HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

*Stated Meeting, Held January 6, 1900.*

The President, Henry C. Coe, M.D., in the Chair.

**Strictures of the Eustachian Tube.**—Dr. Arthur B. Duel read a paper in which he discussed the value of electrolytic dilatation for strictures of the Eustachian tube consequent to chronic catarrhal otitis media. There has been a remarkable change of attitude among otologists as to the treatment of chronic otitis media. Formerly, after a definite diagnosis, conscientious surgeons were apt to say that no remedy would be of any service, that the patient would probably grow deaf with time and that there was little hope of amelioration. After several regular practitioners have been tried with like ill success patients usually fall into the hands of charlatans and at least for a time enjoy the mental relief of having some hope held out to them, and having something done for their affection. Later it is realized that nasal and nasopharyngeal conditions were prominent factors in the production of chronic otitis media and that relief of the conditions in the throat and nose often brought improvement in the hearing. Sometimes the otitis media begins in the tympanum itself, but more usually it begins in the pharynx and spreads upward along the Eustachian tube. The narrower part of the tube is always seriously affected, its caliber is greatly diminished, or it is even occluded by the hyperemia which occurs. Later there is an exudation and the inflammatory products thrown out still further narrow the lumen of the tube and do so permanently. The ventilation of the tympanum suffers and this causes a hyperemia all through the inner aural passages. The chronic inflammation continues and the exudate organizes into connective tissue. Incurable

deafness results as a consequence of the sclerotic process. Insufflation is of value in these cases, especially at the beginning, as it relieves the hyperemia. Its most important indication, however, is the ventilation of the tympanum. While inflation by the Politzer bag often suffices, the best method for most cases is the use of the Eustachian catheter. Where inflation fails, a stricture of the Eustachian tube usually exists. This is overcome in a good many patients by dilatation with bougies. Of late, however, electrolysis has been employed for this purpose, with excellent success. In urethral strictures it is well known that electrolysis often gives excellent results. It is from this that the suggestion came to apply a similar method to the ear. Electrolytic dilatation of strictures of the Eustachian tube was first employed in England more than ten years ago. Some six cases were reported in the *Lancet* as treated by this method, but since then it seems to have fallen into disuse.

**Technic of Methods.**—Neither of the English physicians who tried electrolytic dilatation of Eustachian strictures used a bougie which protruded more than an inch from the end of the Eustachian catheter. In recent work at the New York Eye and Ear Hospital a bougie that protruded an inch and a half, or more, according to the necessities of the case, was employed. The catheter was solid silver and was insulated by being wrapped with a piece of rubber tissue. It is in size about No. 3 or No. 4 of the French scale. The bougie is made of solid gold. The olive-pointed end fits into the aperture of the Eustachian catheter. Both instruments may be thoroughly sterilized by boiling. Before its use, to avoid infecting the tube, the nose and pharynx should be rendered as thoroughly aseptic as possible by the use of an antiseptic, such as Dobell's or Seiler's fluid. The bougie after the insertion of the catheter into the Eustachian tube should be introduced until it meets with an obstruction. No pressure should be used, but a current of from one to three milliamperes should be allowed to flow for a few minutes. Usually the instrument will pass after a short interval. If after from three to five minutes it does not, the current should be increased to five milliamperes. As a rule the bougie then passes the obstruction without pressure. Patients will tell of hearing bubbles in their ears which shows that the electric current is melting the sclerotic tissue of the strictured tube. At the New York Eye and Ear Infirmary where this method has been in use now for considerably more than a year some fifty cases have been tabulated. In all most satisfactory results have been obtained. Three typical cases may be given. The first patient, Dr. S., was troubled with increasing deafness and very bothersome tinnitus, which had been relieved for some years by treatment of the nasopharynx and by insufflation with a Politzer bag. Gradually the condition became worse and could not be relieved by these measures. On examination a stricture of the Eustachian tube was found. An

electrical bougie was passed, the current applied and the stricture promptly yielded. Inflation was practised for several days afterward and the patient was discharged completely relieved of his deafness and of the ringing in his ears. He has remained well for nine months practically without any treatment. Some tinnitus having recurred about two weeks ago he came back for inflation, which promptly relieved his symptoms. In a second case inflations failed to relieve the symptoms. The deafness was very pronounced, the tinnitus extremely annoying, and troublesome vertigo was present. Before electrical treatment, a whisper could scarcely be heard at all. After the stricture had yielded and inflations had been practised for a day or two, a whisper could be heard at the full length of the room, twenty-four feet. The patient was warned that occasional inflations would be required, but he felt so well that he neglected the advice. About six months afterwards some of the old symptoms recurred. Only inflation was necessary to relieve them. After a time this measure was neglected once more. For over a year now there has been no recurrence of any of the symptoms. The third patient was a well-known singer in whom the bone conduction of sound was increased on both sides. Inflation improved the hearing on the left side, but had no effect on the right. After the passage of an electrical bougie on the right side, followed by inflation, his hearing which was very markedly defective was very much improved. Hearing on the left side was improved by the same treatment.

Progressive deafness is usually caused by atrophy and sclerosis of the tissues of the middle ear. The inflammation of the tube is only local and practically always produces a stricture. The indication is to remove this obstruction as soon as possible. The easiest, quickest, and most efficient method of accomplishing this is by electrolytic action. This method requires less force, there is less danger involved in it, and the bougie will pass after the current has been allowed to act for awhile. Often in these patients it would be impossible to introduce a cotton or other ordinary bougie. Strictures thus relieved do not recur. At least the experience at the New York Eye and Ear Infirmary justifies this positive declaration. Where temporary relief follows inflation, one can hope that the hearing may be entirely restored by the electrolytic method. All tubes should be opened when there is reason to think that their closure is an etiological element in the deafness.

Dr. Sturgis said that the use of electrolytic action in the treatment of urethral strictures has been practically abandoned, because of the danger of making false passages and because of the liability to recurrence and the great difficulty of dilatation after recurrence has taken place. It is very easy to make a false passage with the bougie in attempting to pass it through a stricture by the aid of electrolytic action, because the urethra deviates so much when strictures are of

any considerable length. The destruction of tissue is followed by the production of scar tissue which has a very marked tendency to firm contraction and a constriction takes place that is much harder to pass than the first. Whether these same objections would hold against Eustachian electrolysis only experience can show.

Dr. Brandon said that he had been under Dr. Duel's care for deafness and tinnitus aurium and that all of his symptoms had been very much relieved by the electrolytic dilatation of his Eustachian tube. The sensations were not pleasant, but were not very painful, and the relief afforded had been very marked. The tinnitus was greatly lessened and his hearing very much improved. He had practically given up hope and had yielded to the idea that, like his father, he would have to submit to deafness as he grew older. Insufflation had failed before to relieve his symptoms, but now when there are slight recurrences inflation is of great service. The difference in the nature of strictures of the Eustachian tube and of the urethra makes it probable that recurrences will be very different in the two structures. There is not much soft tissue around the Eustachian tube to be affected by the current and so there is not the production of much scar tissue. As to a false passage, that would seem to be guarded against in the Eustachian tube by the presence of the bony canal.

Dr. Joseph Kenefick said that every day adds to the conviction that the electrolytic dilatation of the Eustachian tube is a brilliant discovery. It does cause some pain but complaint is made only by very nervous patients. Those who suffer most come back to have the operation repeated because of the relief afforded. There is no danger in the operation and it has solved a great and a difficult problem in otology.

Dr. Duel in closing the discussion said that there is no danger of making false passages in the Eustachian tube because very little pressure is used when the electric current is employed. Much less is used than in many other methods. It may be necessary to do the operation in two sittings. The first time the bougie may not pass, while the second time it will be found comparatively easy to pass it on. The indication is to open the tube.

**Trumpet-Mouthpiece above Soft Palate.**—Dr. Frothingham reported a case in which a child had swallowed the porcelain mouthpiece of a toy trumpet. At least the mouthpiece had disappeared from the child's mouth and caused symptoms of difficult breathing and swallowing. A number of physicians were consulted and a number of different forms of bougies employed to locate the object, all of which proved unsuccessful. When the child was brought to the Vanderbilt Clinic it was found that the mouthpiece was lodged above the soft palate in the nasopharynx. From here it had caused all the symptoms that had been noted yet had completely escaped observation. The probabilities are that it had been coughed into this position.



## NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, Held January 4, 1900.*

The President, Wm. H. Thomson, M.D., in the Chair.

**Migraine as a Neurosis.**—Dr. Coleman W. Cutler said on this subject: Heredity is the most prominent feature in the etiology of migraine. Sometimes the heredity is not direct, but the neurotic disposition is manifest in the ancestry or in the family and at times neurotic tendencies are replaced by other diatheses, such as the rheumatic, the gouty, or the diabetic. The most striking symptom of the disease is the aura. This is practically always present although other features of the disease may be absent, or may not be very prominent. The most important auras are those in the visual sphere, usually bizarre light effects, bright muscae volitantes, fortification figures, or showers of stars. More rarely other aura are noted, as, for instance, peculiar odors entirely subjective in origin; at times subjective tastes. Leyden has recently reported a case of recurring metallic taste just before an attack. Then there are at times various paresthesia that replace the visual aura. Defects of memory and paraphasia have been noted as preceding attacks of migraine. The disease does not always occur regularly, that is, at regular intervals, but may follow certain definite causes. A prominent physician in the city always has an attack of migraine after taking any unusual exercise. He takes advantage of this fact to anticipate his recurring attacks of migraine. Whenever he has any important duties at a definite time he deliberately brings on an attack by taking a certain amount of unusual exercise and then he is sure that he will be free from the affection for some weeks. He finds that he is able to control most of the discomforts of an attack by a quarter of a grain of morphine. This does not produce sleep, but allays the discomfort. It must not be forgotten that attacks of migraine may be initial symptoms in such diseases as tabes, general paresis and brain tumor. When a first attack occurs late in life suspicion should be aroused as to the existence of some organic lesion of the nerve centers. This must be especially borne in mind if the patient is not of a nervous disposition and there is no special neurotic family history.

**Glaucoma and Migraine.**—Great care must be exercised in the differential diagnosis of glaucoma and migraine. Time is very precious in the former affection and a day or two of delay may mean the loss of vision. It is sometimes advised to use the ordinary remedies for migraine and then if they do not succeed to suspect the presence of glaucoma. This advice is bad and may easily cause permanent loss of sight. In cases of migraine the tension of the eyeballs should always be carefully tested. Especially must this be done if patients come with a first attack of

what seems to be migraine. In general it is to be remembered that eye defects have an important bearing upon the existence and persistence of migraine. All discoverable visual defects should be corrected. Other sources of peripheral nerve irritation should also be carefully looked to. It is not enough to correct astigmatism, but adenoids should also be removed and hypertrophied turbinated bones should be properly treated. It is curious to note that all of these sources of peripheral irritation are distinctly hereditary in many families and as heredity is the most important etiological element in migraine, the relation between such conditions and the affection almost immediately suggests itself. The subject of migraine and neurotic equivalents is too large for discussion as a part of a paper on migraine. It is well known that certain of the minor neuroses occur in patients who suffer from migraine. The question of the relationship of migraine and epilepsy has been much discussed. They are certainly very similar, although the best authorities are now agreed that they are not the same affection. As to the connection between migraine and the gouty diathesis there is a good deal of difference of opinion. Trousseau thought that he never saw migraine without being able to find some traces in the individual of chronic gout. Moebius declares that he has never seen migraine in gouty patients. It is evident that the truth lies somewhere between these two extreme opinions. That both conditions are distinctly hereditary is, of course, well known to all.

**Treatment.**—Notwithstanding the number of drugs that have at various times been recommended as specifics for the treatment of migraine there are practically no pharmacologic preparations that can be depended on either to relieve the symptoms or to increase the intervals between the attacks. The usual rule is that, after long experimentation with different remedies, victims practically give up drug taking and become resigned to sacrifice a day to the affection when it occurs. Various nerve sedatives serve to lessen the discomfort. Lithemia is set down by some as a cause of the disease and treatment for the condition is sometimes instituted with asserted success. Lithemia itself is, however, a most indefinite condition and the treatment is not very settled. Many cases of migraine are benefited by the oculist. About fifty per cent. of the cases will be at least improved by the correction of visual errors. Notwithstanding all that has been said of recent years with reference to the significance of muscular defects of the eye in connection with migraine, it is usually the correction of errors of refraction that brings improvement. There are certain cases, however, in which the correction of the muscle balance helps the migraine.

**Is Migraine a Neurosis?**—Dr. Wm. H. Thomson questions whether migraine is really a neurosis. It seems rather to be an intermittent toxemia due to specific poisons which are ab-

sorbed from badly digested material in the intestinal tract, or to the imperfect neutralization of such toxic substances in the circulation by a defect in the ordinary antitoxic processes that accomplish this purpose. One thing is very queer. All out-of-door workers are exempt from the disease. While the affection is much more common in women than in men, it does not occur among women who work in the fields in certain countries. Its favorite victims are those who spend most of their lives indoors and at a sedentary occupation. Outdoor work prevents stasis in the portal circulation, while sedentary indoor occupations rather favor it. It is evident that there is here an important etiological factor in the disease. And the old idea that migraine is a pure neurosis must not be permitted to have too much weight either in the consideration of the pathology, pathogeny or treatment.

**Migraine and Graves' Disease.**—Migraine occurs much more frequently in people who are afflicted with Graves' disease than is usually considered to be the case. This connection between the two diseases serves to throw light on the etiology of both of them. Graves' disease itself is much more frequent than it is usually thought to be. The affection may occur entirely without exophthalmos and without any enlargement of the thyroid gland so that the name exophthalmic goiter is a misnomer. It is probable that there are at least as many cases of Graves' disease without prominent eyeballs and enlarged thyroid as with these symptoms. It has been the custom to speak of such cases as latent Graves' disease, but this name is unsuitable since there are certain characteristic symptoms of Graves' disease present which can easily be demonstrated. Out of sixty-five observed cases of Graves' disease thirty-two were without exophthalmic goiter, while thirty-three had these symptoms. All of the cases had the persistent tachycardia, which is so essential to the disease, and most of them had the nervousness, the tremor and the digestive symptoms. The nervousness of the disease is often described by patients as a sense of fear which they themselves feel to be without reason. The tremor is nearly always worse in the morning and may disappear towards evening. Of these sixty-five cases in only five was the tremor not worse in the morning. Vague peripheral pains are frequently present and sometimes there are spots of hyperesthesia. At times the ears are tender to the touch, and this symptom may be one-sided. The evil of naming an affection from some one prominent symptom which is not essential to the disease is brought out very clearly by the mistakes of diagnosis which occur with regard to Graves' disease. To the ordinary student and the general practitioner Graves' disease is exophthalmic goiter. Where these two symptoms, the exophthalmos and the goiter are absent, there seems nothing to suggest the diagnosis is Graves' disease. The same thing happens in locomotor ataxia when that disease begins without an incoordination of gait.

In four fatal cases seen in recent years all the patients suffered for a considerable length of time before the Graves' disease was recognized. All died by simple stoppage of the heart and without a struggle. Three had no goiter at the time of death.

**Graves' Disease an Autointoxication.**—It is now pretty generally conceded that Graves' disease is due to the presence of toxins in the circulation. It was formerly considered that these came from the enlarged thyroid, but this idea has been practically abandoned since it is now realized that Graves' disease exists without an enlarged thyroid. The most probable theory for the etiology of the disease seems to be that it is a malassimilation of nitrogenous material by the system, just as diabetes is a malassimilation of the starch elements of the food. The unassimilated nitrogenous substances are toxic and are ordinarily destroyed by the secretory activity of the thyroid, hence the frequent enlargement of this organ to meet the increased functional necessities. Sometimes the irritation of the thyroid instead of leading to hypertrophy, leads to atrophy of the gland with consequent myxedema.

In a recent case of combined Graves' disease and epilepsy, in which the patient had suffered from the age of seven until she was eighteen with epilepsy, the convulsions disappeared under treatment. Later exophthalmic goiter appeared and this has now given place to distinct attacks of migraine. Out of thirty-two observed cases of Graves' disease without goiter and thirty-three with goiter in twenty-six and twenty-eight respectively headache was present, and in 65 per cent. of all the cases this headache took on the distinct characteristics of migraine. A prominent feature of both migraine and Graves' disease is that they are associated with gastric disturbances. Both of them are distinctly influenced by heredity and occur by preference in neurotic families. Of all the pathological conditions that are inherited, gastric idiosyncrasies are the most common.

**Migraine as a Neurosis.**—In the discussion Dr. Charles L. Dana said that migraine is the most common of the neuroses. Probably every physician has either experienced it in person or has seen it in some of his ascendants or descendants. It is a discharging neurosis, involving higher nervous centers than does epilepsy. It is especially in the cultured that the sensory centers are liable to be unstable and it is in these particularly that migraine occurs. Eye treatment sometimes does good, but certainly not in more than ten per cent. of the cases that come to neurologists, although, of course, these are mostly cases that have been under treatment by others. The antitoxic treatment by the salicylates and resorcin undoubtedly does good. But this does not seem to be so much because these drugs prevent an autotoxemia, as because they lessen the irritability of sensory nerve centers. Migraine is undoubtedly common in Graves' disease and the calling attention to this fact is of great practical

interest. The connection between the two diseases, however, does not militate against migraine being a neurosis. The fact that it has certain neurotic equivalents shows that it is surely of nervous origin. Every neurologist has seen the attacks of migraine occasionally replaced by such purely nervous affections as ptosis or Meniere's disease. Dr. Sachs said that to consider migraine as a toxemia rather than a neurosis is purely speculative. While many people suffer from toxemia only certain people with a predisposition have attacks of migraine. The neurotic equivalent for migraine seems to show that it is certainly a neurosis. In a recent case, after the disappearance of epilepsy, migraine asserted itself. Whether the opposite ever happened is not very clear. The relation of migraine to Graves' disease is problematic and the two occur together rather rarely. To call tachycardia, without any other symptoms Graves' disease is at least risky. Other symptoms are necessary for the diagnosis.

In closing the discussion Dr. Thomson said that simple tachycardia never means Graves' disease for him. There must always be present certain other characteristic symptoms, such as tremor and the digestive symptoms, either diarrhea or constipation, with the vague pains and paresthesia of which previous mention had been made.

#### NEW YORK ACADEMY OF MEDICINE—SECTION ON SURGERY.

*Stated Meeting, Held January 8, 1900.*

Charles N. Dowd, M.D., Chairman.

**Aneurism of the Innominate.**—Dr. Fiske presented a woman, forty years of age, who first began to complain of symptoms in her thorax last March. There is now a distinct tumor to the right of the sternum in the subclavicular region, in which there is marked pulsation and a distinct aneurismal bruit. There is also some difficulty in swallowing and some huskiness, showing involvement of pharyngeal and laryngeal nerves. The patient has been under medical treatment since last March, but has not been benefited.

Dr. Bolton said that gelatin injections had been tried in this case, but without benefit. They had been tried also in four other cases and in none of them had the beneficial results claimed by the French surgeons been secured. They gave great pain and sometimes caused distinct rises of temperature. It is evident that they are not entirely without danger since after one injection the temperature rose to 104° F. At the Hudson Street Hospital the conclusion is that the gelatin treatment is of no service.

**Sarcoma Cured.**—Dr. Coley presented a patient who developed some four years ago a tumor of the parotid gland. It was removed and proved to be a sarcoma. It recurred in the same situa-

tion and was again removed. It then not only recurred in the parotid, but also in the sublingual and in the submaxillary glands. When the tumor reached a circumference of from three to four inches and extended from the auditory meatus almost to the angle of the mouth, it began to ulcerate. The patient was then sent to Dr. Coley and he found in addition to the parotid tumor a submaxillary tumor the size of a hickory-nut. It was hopeless to operate again and so the mixed toxin of erysipelas and the bacillus prodigiosus were injected. As the case was a very severe one the injections were made directly into the tumor and in very large doses. There was considerable reaction after the injection, the temperature on several occasions going as high as 104° to 105° F. Slight improvement in the symptoms and some diminution in the size of the tumor were noticed at the end of a week. In ten weeks the growths had completely disappeared. It is now two and one-half years since the beginning of the treatment and there has been no recurrence. The man is in perfect health and there is only a scar to mark the place where the ulceration occurred on the surface of the tumor.

Dr. John A. Wyeth asked if Dr. Coley thought that the infective agents at work in such a case might not have something to do with the cure. When tumors are suppurating the injection of toxins often leads to an increase in the virulence of the suppurative process already existing. The absorption of infective material from a suppurating focus might be the real agent at work. Dr. Coley replied that where suppurating foci exist he is always careful to cleanse them as thoroughly as possible and that his experience does not show that such suppurative processes become more intense while the injections are being made. In a recent case he had the opportunity to assure himself that cure took place absolutely without the presence of any infective agent. In the mixed toxins the bacilli are carefully removed before injection. A large tumor of the thigh gradually disappeared under the injection of the toxins with the production of certain cystic cavities. From these cavities broken-down tumor debris was removed by aspiration and absolutely no pyogenic agents could be demonstrated in the material so removed.

Dr. Wyeth reported a case of a large tumor of the abdominal wall in which Dr. Welch, Dr. Wardwell, of Cohnheim's laboratory, and himself, had each independently made the diagnosis of sarcoma. It was so large that it seemed hopeless to attempt to remove it. At the time certain cases of sarcoma had been treated with reported success by injections of arsenious acid. The remedy was tried. It set up an intense inflammatory process. Septicemia developed and for a while it seemed as though the case would inevitably terminate fatally. After being very low, however, the man began to recover and with his recovery the tumor began to disappear. When convalescence was complete no sign of the tumor was left. That was fifteen years ago. The man



is alive and well, in one of the Southern States and is able to do a hard day's work. In a case that came under observation about eight years ago an immense tumor of the omentum was present. This pressed on the portal vein so much that ascites developed and the patient had to be tapped every few weeks. An exploratory laparotomy was done although there was scarcely any hope that the tumor would prove operable. The growth was found to be a very vascular neoplasm with large thin-walled vessels running over its surface. The neoplasm was so succulent that no section of it was made for purposes of microscopic examination. Whether it was a sarcoma then or not, was not certain, but it had all the clinical signs of a sarcoma. The wound was left open and the tumor exposed to the air, the general abdominal cavity being protected as well as possible by packing. Suppuration took place and the tumor gradually disappeared. The patient is now living and no signs of the tumor remain. It would seem, then, that while there is no doubt that the toxins of various micro-organisms can produce a beneficial effect on sarcomatous tissue and cause its disappearance, this may also happen as the result of the presence in the circulation of materials absorbed from ordinary infective processes. What element in the infection it is that causes the disappearance of the sarcoma is as yet in doubt. The subject is well worthy of a further attentive study. Dr. Coley is to be congratulated on the light he has thrown on this subject, and the excellent work he has done in bringing the matter before the profession in America in a thoroughly scientific manner.

**Intestinal Resection; Recovery.**—Dr. Coley presented a patient, a physician, forty-three years of age, who in May, 1899, suffered from a series of attacks apparently of chronic appendicitis. An operation for this was performed and it was found that the cecum was infiltrated with neoplastic tissue which had also spread to the small intestine. The removal of the whole growth seemed too radical a procedure, so nothing was done. Some weeks later the whole mass was removed. The ileum was resected in its continuity and an end-to-end anastomosis made with a Murphy button. After the removal of the cecum the ascending colon was closed by a row of sutures and also the distal end of the ileum. Then the two structures were connected by a lateral anastomosis, for which an oblong Murphy button was used. Recovery took place without an incident and on the tenth day both buttons came away. There have been no symptoms since except that occasionally after meals there is an accumulation of gas which can be relieved by simple external manipulations. The patient has regained his health, strength and weight. There are no signs of the recurrence of the growth and allowing for the short time elapsing it would seem that a radical cure has been effected.

**Aortic Aneurism.**—Dr. John M. T. Finney of Baltimore read a paper on the treatment of this

condition, which he thinks should be surgical. The Tufnel treatment has benefited some cases, but they are very rare. The cures that have been announced are even rarer and we have not any assurance as to their persistence. For vessels of medium size it is questionable if any treatment except operation is justified. The Hunterian operation in these cases gives excellent results. As to aneurism of the abdominal aorta, this is very different. Nine cases in which the abdominal aorta has been tied have all proved disastrous. A case in which Keen tied the abdominal aorta and in which the patient survived is reported. This case is a recent one, however, and the details are not substantiated. MacEwen's operation of needling the internal wall of the sac, so as to lead to the formation of an internal thrombus sometimes gives good results, but it is slow in its operation and cannot always be relied on.

**Gelatin Injections.**—The injections of gelatin suggested by the French surgeons have not proved as successful as was promised. The brilliant results have been obtained nowhere else. Dr. Futcher has experimented with the method at Johns Hopkins Hospital in nine cases. In six of them the treatment has been carried on for a sufficiently long time to give definite conclusions as to the value of the procedure. No positive cures have been obtained in any of the cases. In one there was diminution in size of the aneurism. In five cases the patients were subjectively better. The injection of gelatin did not add to the coagulability of the blood. This was demonstrated by careful tests. Despite Lancereaux's assurances that the injections produced no discomfort, they were usually accompanied by considerable pain and sometimes followed by fever. There was never any local suppuration and only in one case was there a local reaction. The gelatin method does not cure, but it is of some value in certain cases. In conjunction with the wire method it is better than either one of them alone. Where it seems inadvisable to use electrolytic methods hereafter, it is advisable to combine these two methods.

**Coiled Wire and Electrolysis.**—The most effective treatment for aneurism is undoubtedly the insertion of wire and the electric current. As to the wire that should be used it has been found at Johns Hopkins that a silver alloy highly drawn is the best for this purpose. The alloy is composed of 75 parts of copper to 1000 parts of silver. When highly drawn this wire, unlike pure silver, retains considerable tendency to coil within the sac and yet is more pliable than any other form of wire, so that there is much less danger of puncturing the sac. If anything causes the wire to become blocked or it kinks another needle may be inserted at some little distance from the first and wire passed through this. If there is a multilocular sac a series of wires may be passed. The direction of the wires should as far as possible be away from the neck of the sac and in the same direction as the incom-

ing current of blood. The positive pole should be attached to the wire within the sac, not the negative pole. The negative pole causes the formation of a clot which breaks down easily.

**Danger and Results.**—Sepsis is the omnipresent danger in wiring an aneurism. The point of insertion of the needle should be rendered as aseptic as possible. There is some danger of the development of an additional aneurismal sac by a change in the direction of the blood stream and the setting up of a current against a part of the sac which was not acted on before. The current should not be allowed to act through the needle itself. For the purposes of insulating the needle it has been found that a French lacquer acts very well. At times the wire passes out of the sac itself and causes complications by the formation of clots in the blood stream which may give rise to thrombi in the general circulation or interfere directly with the heart action or with the valves. In some reported cases the impinging of the wire on a valve has caused death. In others the interference with the valvular mechanism has led to syncope. It has been said that the presence of a distinct double diastolic and systolic sound shows that the sac has a small opening. Halsted, however, found on autopsy in a case in which there had been a distinct and characteristic aneurismal bruit that the opening was a large one, so that this diagnostic rule does not hold in all cases. The danger of perforating the sac has been exaggerated. As a matter of fact, when suitable wire is used it coils up and does not produce the slightest traumatism.

The reported results of the use of wire and electrolysis on large aneurisms certainly justify the continued employment of this method of treatment. At least twenty per cent. of the reported cases have been cured. Dr. Stewart of Philadelphia wired one of his patients three times and the patient felt better each time. Hare's case has continued well ever since the operation. In other recent cases persistent results have been at least as good. The great drawback, so far as statistical hopes are concerned, is that the cases which are wired are not selected cases, but are hopeless cases in which a fatal termination seems not far off unless something is done. As a matter of fact, wiring completely changes the aspect of some of the patients and makes them hopeful. One patient was a most pitiable picture. He could not lie down at all, but took whatever rest he could get sitting bolt upright and there was a continued feeling of the most severe discomfort. At the present time this patient can lie down and considers that he has been practically cured. In another case the right chest filled up frequently with fluid and required repeated tapping. The accumulation of fluid in the pleural cavity is now much less than it was and tapping is not so frequently required.

**Distal Ligatures for Aneurisms.**—Dr. Wyeth discussed some of the older methods of treating aneurisms and their successful application. In one of the old cases Sands tied the subclavian

and carotid arteries of the right side. The tumor diminished in size and all visible pulsation ceased. For some time all the subjective symptoms disappeared. After three months there was a recurrence with fatal termination. In the same way the common carotid has been tied with the induction of undoubted relief. In a number of cases within the past fifteen years distal ligature has been accomplished successfully, both as regards the operation itself and its effect upon the aneurism. Even where the innominate was involved in the aneurism, such ligations have been successful, so that they are not contraindicated under these circumstances. This method of treating aneurism should not be allowed to sink into desuetude. His experience with wiring has not been very great. Once by a method analogous to the use of wire the life of a patient was saved. He was a young man of twenty-four who came to the Polyclinic with a huge pulsating tumor in the upper part of his thorax. There was a balloon-like dilatation of the skin, the aneurism having fretted its way through the sternum and through two ribs. It seemed to be on the point of bursting and quick action appeared to be demanded. Some harelip work was being done that afternoon and twenty-five sterilized harelip-pins were at hand. One by one these were plunged into the tumor, just as if it were a pin-cushion. Eighteen hours later they were removed. The effect was excellent. The tumor sank almost to the level of the thorax, having bulged out a great deal before, and the subjective symptoms were much lessened. Twenty-four hours after their removal they were once more inserted and left in for twelve hours. Then the patient was kept absolutely at rest and put on potassium iodide for some time. The pulsation disappeared and the patient remained comfortable and was able to work as a painter for a year and two months, when he died suddenly, apparently from cerebral embolism. Before the introduction of any foreign body into an aneurism, however, a thorough trial of the Tufnel treatment is advisable. The prophylactic treatment of syphilis should be borne in mind and extensively taught to the public.

#### THE CHICAGO MEDICAL SOCIETY.

##### *Recent Meetings.*

**Blastomycotic Dermatitis.**—Dr. Henry G. Anthony reported an interesting case of this disease before the December meeting of the Chicago Medical Society. The report of the pathologist, Dr. M. Herzog, on this case is as follows: "Histologically, the tissue presents a proliferation of the epithelial elements, which proliferation extends downward into the connective tissue in the form of pegs, such as are seen in skin cancers. The following may be points of differential diagnosis between skin cancers and blastomycotic dermatitis. In the latter epithelial cells are

not cut off anywhere from the surface in the form of closed alveolar nests, nor do the proliferated epithelia become hornified. That seems to be quite an important feature. In skin cancers the proliferating epithelium shows an early tendency to become hornified. In the sections of this case, we do not see any true epithelial pearls. In the epithelial masses you see small miliary abscesses which contain leucocytes, ordinary polymorphous leucocytes and a great number of eosinophilic leucocytes; it is particularly in the miliary abscesses that the yeast cells are found in the shape of double contoured bodies. The cutis proper is characterized by a great deal of inflammatory reaction, and among the cells infiltrating the tissues are a large number of typical plasma cells. I have also found in some of the miliary abscesses giant-cells of a type such as are found in tuberculosis. I have stained and examined sections for tubercle bacilli and other bacteria, but have not found any. I must also say that I have not found anywhere anything characteristic of syphilis, but as I had only a very small piece of tissue, I could not make any special stains for syphilitic lesion.

"The histological features which are found are absolutely in accord with the pathology of the cases of blastomycetic dermatitis described by Hyde, Bevan, Hektoen, Gilchrist, Buschke and others."

**Goiter with Recurrent Paralysis.**—Dr. A. C. Klebs presented a patient with a "forme fruste" of exophthalmic goiter with tracheal stenosis and recurrent paralysis. The patient was a young man, twenty-two years of age, in whom, of the three cardinal symptoms of Graves' disease, only the struma was well-defined. Pulse ranged from 92 to 102. Exophthalmus was not very marked. The signs of Stellwag, Graefe and Moebius were absent. There was a slight tremor of the hands, and inclination to perspiration, palpitation, nervous irritability and headaches. The struma was rather hard and pressed on the trachea, which was bulged in; there was paralysis of the left psoctus, hence difficulty in respiration (stridor) and phonation. There was no distinct improvement after five weeks' rest. Iodides and faradism have been resorted to without much benefit. The author believes that partial extirpation of the struma is indicated.

**Gunshot Wound of the Abdomen.**—Dr. Jacob Frank reported this case at a meeting held January 10th. The patient, Mrs. A., mulatto, aged twenty-three years, and was admitted to the German Hospital July 26, 1899. She was accidentally shot with a 38-caliber revolver about 1:30 P. M., and was brought to the hospital four and a half hours later. The bullet entered the abdomen in the left hypochondriac region, two inches below the last rib on the left axillary line. No wound of exit was found. She complained of slight pain, which was referred immediately back of the point of entrance of the ball in the region of the kidney and about the uterus. She thought the pain about the uterus was due to menstrua-

tion, but as the bullet was found in the cul-de-sac of Douglas, the increase of pain is well accounted for here. The patient was in good condition; the pulse strong and regular; no emesis, faintness nor dejection from the bowels. There had been but little hemorrhage; no distention of the abdomen, and percussion and palpation failed to locate the bullet. From the position in which the bullet left the pistol and from its entry, it was determined that it would be almost impossible for the ball to travel in said direction without injuring the intestines. The patient was anesthetized, the bullet wound was enlarged and the finger introduced with the hope that the track of the bullet might be followed. Failing to detect the ball, or an opening in the peritoneum, an incision six inches long was made to the left of the median line on the outer border of the rectus muscle, beginning one and a half inches above the umbilicus and extending downward and inward toward the mons veneris. Upon opening the abdomen a small quantity of fluid and some blood were found, but no escape of intestinal contents. The patient was eviscerated from the pylorus, the parts being protected by warm towels, the injuries to the intestines being noted and marked with a piece of gauze pushed through the mesentery. Examination showed that the bullet, after penetrating the walls of the abdomen and perforating the walls of the small intestines besides bruising two or three other portions, as was shown by a marked ecchymosis, had dropped in the cul-de-sac of Douglas, whence it was extracted. A small bleeding point was found a short distance away. It was found impossible to repair the perforating wound with sutures in the gut. Resection was therefore made and a one and one-eighth inch Frank's coupler introduced and the anastomosis completed in the usual way. The bruised portions were closed with Lembert sutures. A gauze drain was introduced in the bullet wound incision. At the upper end of the laparotomy incision, a gauze drain was inserted, and at the lower end a modified Mikulicz drain was introduced into the cul-de-sac and removed after thirty-six hours. There was very little shock following the operation, and the patient rallied nicely from the anesthetic. Her recovery was uneventful, and on October 8, 1899, thirteen days after the anastomosis, the piece of rubber tubing was passed. The patient left the hospital October 23, 1899, and has enjoyed her usual health ever since.

**Venous Angioma.**—Dr. D. N. Eisendrath presented a case of congenital nevus, involving all of the fingers of the right hand in a child five years of age.

**Gangrene Following Schede Operation.**—He also presented a case of gangrene of the foot following a Schede operation for the relief of varicose veins combined with ligation of the internal saphenous vein. The patient was forty-three years old, moderate drinker, with no history of venereal disease, but with well-advanced arteriosclerosis. The urine was free from albumin or



sugar in a number of examinations. The above operation was performed in December, 1898, shortly after which the patient had severe pain in the second toe, which became black and lifeless about four months after operation, necessitating its removal. The wound never healed, and in May, 1899, the third toe had become dark bluish-red in color, and the former amputation surface black. There was also a black irregular shaped patch extending upward on the dorsum of the foot about three inches long and about one inch wide. Palliative treatment being of no avail, it was necessary to perform a Pirogoff amputation in June, 1899. Patient presented himself to Dr. Eisendrath about two weeks ago. The amputation stump at this time was dark bluish in color, and there was an ulceration at the apex of the stump, so that it looked at first as though an amputation higher up would be necessary. The limb was edematous below the level of the Schede operation. There were no traces of any varicose veins. There had never been any ulceration. The patient was not shown to throw discredit upon this operation, which has given most excellent results in the majority of cases, but simply to call attention to the fact that it may be, at times, followed by complete venous stasis and gangrene, and that the operation is not to be advised when there is much arteriosclerosis, or when the return circulation will be at all impeded.

**Unilateral Surgical Kidney.**—A third case was that of a patient who had been operated upon one and one-half years ago on account of a pyelonephritis, with excellent recovery. The other kidney had remained apparently normal and the urine was clear. The patient had been treated with antitoxin for diphtheria since that time, and had also undergone an operation for cystic ovary. The case was chiefly instructive on account of the fact that the general teaching is that surgical kidney is most frequently bilateral, and such cases as the above show that nephrectomy for such conditions offers a good prognosis. A specimen of surgical kidney was also shown, which had been removed at autopsy from a woman who had suffered from a cystitis and in whom the opposite kidney was also found to be perfectly normal.

At the meeting held January 17th there was a symposium on disinfection.

**Preparation for Disinfection.**—This was discussed by Dr. C. Fenger. In preparing a patient for an operation it is customary to have him or her in the hospital for from twenty-four to forty-eight hours previous to operation, the object being threefold—mental, physical, antiseptic. During this preliminary stay in the hospital the patient has an opportunity to become accustomed to hospital-life, and to overcome anxiety. The patient rests in bed or lounges about the room as inclination or circumstances may dictate. Few, if any, visitors are admitted. During this time the physicians in attendance become acquainted with and accustomed to any peculiarity or idiosyncrasy which may prove of aid in the after-

treatment. The stomach and intestinal tract should be carefully looked after and efforts made to correct any abnormality or irregularity in their action. There is no difficulty in getting absolutely sterile instruments, ligature and suture material, sponges, dressings, clothing, etc. The real danger of infection is in the incised skin of the patient or in the hands of the operator or his assistants. The chief aim in the preparation of the skin is the mechanical removal of the masses of loose epidermis with bacteria. This is best accomplished by means of soap and water and a stiff nail-brush. Too much confidence is placed in so-called antiseptics. To a greater or less extent they are all poisonous, and if used in a solution of sufficient strength to kill germs will do damage to the tissues with which they come in contact, and if so weak as not to cause damage to the skin, are frequently of little or no value as bactericides.

**Schleich's Skin Sterilization.**—Dr. E. Wyllys Andrews read a short paper on this subject. Exhibition of Schleich's marble dust soap was made, and its use illustrated. Schleich lays down the emphatic rule that brushes should never be used, as they are incapable of being cleaned and therefore become "labyrinths of filth and slime." In his method chemical antiseptics are given an unimportant place. They tend to injure the skin and do not effectually sterilize it. The properties required in a good soap are: (1) Sterile materials; (2) detergent properties, hence the use of marble dust; (3) some ammonia to act as a liquefying agent or flux, the soda or potash being too hard when saponified; (4) fat emulsifying power to carry away the waxy deposits of the skin (cholestrin, keratin, etc.), for which purpose he introduces what he calls "stearin paste"; (5) wax, free in the mass, to leave the skin anointed, for which purpose so-called "cerate paste" is put in the soap; and (6) sterile running water.

The soap is a white paste of gritty feel. It is applied by rubbing with squares of sterile gauze made into small napkins. A wax-like feel is left after it has been washed away. Personally, Dr. Andrews testified that it is less irritating to the skin than green soap used with a brush.

**Operator and Assistants.**—The following method is practised by Dr. Jacob Frank in his work at the German Hospital: The operator and assistants change their garments, putting on white duck trousers and sterilized shirts. The head and beard are covered by sterilized gauze. The operator and assistants scrub their hands and forearms for fifteen minutes with sterilized green soap and running water, finger-nails having been previously cut short, are cleansed by nail-file. If the operation is a laparotomy, the hands are sterilized by being immersed in a saturated solution of potassium permanganate, followed by a warm saturated solution of oxalic acid. This is followed by sterilized lime-water, and lastly sterilized water, known as Kelly's solution. In all other cases Kelly's solution is omitted. The

hands are scrubbed from three to five minutes in a  $\frac{1}{1000}$  bichlorid of mercury solution, followed by alcohol and sterile water. Rubber gloves are used in all operations. The operator and assistants disinfect their hands in the same manner and for as long a time as if the gloves were not used. The gloves are first thoroughly washed both inside and out in a one-per-cent. solution of sodium carbonate, then rinsed in sterile water and dried by holding over a gas flame for one minute, reversing once. The inside is dusted liberally with soapstone powder which has been previously sterilized by dry heat for two hours. The gloves are wrapped in a double layer of gauze, marking the size on gauze, and placed in a formaldehyde sterilizer for two hours. After removing the gloves from the sterilizer they are wrapped in a sterile towel, the size and date of sterilization being marked on outside of towel. After the hands have been disinfected, as already stated, they are dried in sterile towels, the field of operation is prepared by a second nurse, and covered by laparotomy sheet or sterile towels, the operator and assistants putting on sterile gowns. Everything being ready to begin the operation, the gloves are slipped on. The object of such thorough preparation of hands previous to operation is that in case the gloves become torn during the operation, the hands still remain sterile. Sterilized finger-cots are always on hand in case the finger of a glove becomes torn. This method of sterilization of gloves has been found to be far superior to all others. In the first place, the gloves are sterile. Cultures have been made repeatedly, immediately and two weeks after sterilization, and they have shown absolutely no growth of life. Pure cultures of staphylococci, streptococci, bacillus coli, Klebs-Loeffler bacillus, bacillus typhosus, bacillus pyocyaneus, etc., after having been passed through the formaldehyde sterilizer, have shown no life. In case of abrasions of forearm, rubber armlets are used, which are sterilized in the same manner as the rubber gloves. After the gloves have been used they are re-sterilized.

**Woven Gloves.**—Dr. Coleman G. Buford, a former assistant of Professor Fenger, after nearly two and a half years of observation of the use of gloves in Professor Fenger's operations, concludes that woven gloves have a place in dry operations, and that the outer surfaces of dry gloves usually remain sterile throughout the longest operations. He prefers cotton to silk gloves, but recommends above all the use of rubber gloves, because of their impermeability. Both the woven and rubber gloves are sterilized in any of the usual ways, except that he advises against boiling the rubber gloves in soda, or in carbolic acid solutions stronger than two per cent. A hundred and twenty-five bacteriological examinations were made, and the writer's conclusions are that, in proportion to the work and responsibility of those engaged in the operation, there is a relative increase or diminution in the frequency of cultures from the inner side of the

gloves. This is probably due to reinfection of the surface by bacteria brought from the sweat-ducts, glands and hair follicles by perspiration sponibility of those engaged in the operation, gloves were infected in  $66\frac{2}{3}$  per cent. of the cases, while the least active person, the nurse handling sutures, ligatures and sponges, had no cultures from the inner side of her gloves. A total of 63 cultures were made from the inside of the gloves of all participants, and there was infection in  $28\frac{4}{7}$  per cent., while of the 62 cultures made from the outside, only  $9\frac{21}{31}$  per cent. were infected, and the latter occurred with no more frequency in the case of the operator than with the assistants. *Staphylococcus albus* was the only microbe found. The writer reports but one case of accidental infection during the use of the gloves—a mild albus infection of an inguinal hernia. Stitch-hole abscesses are almost a thing of the past, and wound healing is more perfect and speedy than when the gloves are not used.

He suggests that, in addition to the gloves, the operator sterilize his hands in his own accustomed way, then sweat the hands and forearms for fifteen minutes by immersion in hot water or exposure to dry steam, a second hand sterilization and sweating, then a final hand sterilization. This has been proven worthy of consideration by experiments of Dr. Leonard Freeman; that woven finger-cots be worn by the operator over the glove-fingers on each thumb, and one or more chosen fingers to facilitate in handling tissues, to prevent cutting by ligatures; and that, finally, sterilized armlets of rubber or cloth be used to cover the arms and enclose the glove gauntlets to prevent leakage of fluids from the gloves into the operative field and to prevent contact of gloves with neighboring forearms.

**Surgical Disinfection in the Augustana Hospital.**—The following conclusions expressed the views of Dr. A. J. Ochsner: (1) Theoretically, it is almost impossible to thoroughly and absolutely disinfect the skin of the patient and the hands of the operator. (2) Practically, it is one of the easiest and simplest tasks to obtain a degree of surgical cleanliness that will insure primary wound healing. Theoretically, strong chemical disinfectants are indicated for the purpose of disinfecting the hands. Practically, careful washing with the mildest soap and water and alcohol is absolutely sufficient and very much safer for the patient, because hands roughened by the use of strong antiseptics are much more likely to become hopelessly septic than those which are covered with smooth, healthy skin. (3) It is extremely simple to keep the hands aseptic after they have been rendered so. There is no more difficult task in any clinic than to keep all interested hands clean after they have been disinfected. (4) Sutures passing through the skin and the deep tissues underneath are a menace to the patient, because they form a direct communication between the skin, containing staphylococci, and the deep tissues, which are primarily sterile. These stitches never cause an

infection unless drawn too tightly, in which case the resulting pressure necrosis is the cause of the mischief, because it furnishes these micro-organisms dead tissue to thrive upon. Catgut sutures and ligatures are objectionable. Practically, if applied properly, they are absolutely satisfactory. (5) Theoretically, it is as safe to operate clean cases after dressing suppurating wounds as at any other time. Practically, surgeons who follow this practise always have a great amount of wound infection.

Dr. W. E. Schroeder gave his views on the construction of an operating-room, its furniture, the management of jars, towels, sheets, gowns, rubber aprons, Kelly pads, and a number of small details.

**Drainage.**—Dr. A. E. Halstead spoke on this subject, saying that the subject of drainage of wounds naturally falls into two divisions. (1) The drainage of wounds which are surgically clean, or are supposed to be such; (2) the drainage of wounds which have been infected, or which are made to relieve suppuration or septic conditions.

While there are certain advantages to be gained by the drainage of some aseptic wounds, excellent results are obtained in the majority of cases without resorting to drainage. When it is remembered that in an aseptic wound, in which no antiseptic fluids have been used, there is in a large majority of cases but little oozing, and also that healthy tissues can take care of a large amount of extravasated blood and lymph, the necessity of drainage of clean wounds will appear pressing in only a few cases. He therefore limits drainage among the clean cases to the following varieties: (1) In those cases where there has been much traumatism to the tissues and where large areas of lymphatic vessels have been opened oozing may be expected, and it seems desirable to prevent the collection of such fluid in some dependent part of the wound. (2) where there remain at the termination of the operation so-called dead spaces which cannot be obliterated by deep sutures or other means. These are apt to act as receptacles for any serum or lymph which may escape from the lacerated vessels and which might then furnish a culture medium for some of the bacteria which may be found in almost any aseptic wound. How long should the drain be left in the wound? In his opinion, twenty-four hours is sufficiently long in almost all cases for the following reasons: (a) If the wound is aseptic, all oozing will have practically ceased by this time. (b) If any dead spaces had resulted from the dissection, the tissues will have had ample time to adapt themselves to each other and the cavities will be found nearly obliterated. (c) After twenty-four hours the drain frequently ceases to act as such, the meshes of the gauze being filled with coagulated lymph serum, etc., or, if tubular, the lumen will be frequently found obstructed in a similar manner. The opening in the wound is thus plugged and the drain worse than useless. (d) If re-

moved at the end of twenty-four hours, it will be almost never found that infection has traveled along the path of the drain, an accident likely to occur if the drain is left undisturbed for a much longer period.

In the second class, namely, infected wounds and those made to relieve a septic focus, drainage is demanded almost without exception. Drainage of abscess, empyemas, suppurating joints, etc., is effected in the location which gives the best possible escape to the secretions. To summarize, he uses drainage in the following varieties of cases: (1) When pus is found in the free peritoneal cavity, as in acute diffuse suppurative peritonitis. (2) When there is localized pus formation in the free peritoneal cavity, such focus being walled in by the viscera and adhesions uniting the adjacent viscera. This includes cases of appendicular abscess and pelvic abscesses from pus-tubes, ovaries, etc. When operation is done to remove a collection of pus within a hollow viscus, as a pyosalpinx, or an appendix distended, but not yet ruptured, it is a rule to close the abdominal cavity without drainage unless it has become contaminated by pus by the rupture of the viscus which is undergoing removal.

**Irrigating Fluids in Abdominal Cavity.**—This subject was discussed by Dr. J. B. Murphy, who said that the purpose of irrigation is, first, to remove foreign material from the abdominal cavity; second, to dilute the poisons in this cavity; third, to prevent adhesions, and, fourth, to prevent or stop shock. For the prevention of shock, irrigation is of little or no value. More effective means are now found in intravenous saline injections. The primary purpose of abdominal irrigation is to remove aseptic materials from the abdomen, post-operative, that is, blood, fragments of tissue, cyst contents, serum, etc. Blood-clots can be removed with dry aseptic sponges better than by irrigating fluids.

## THERAPEUTIC HINTS.

### For Membranous Scarletinal Angina.—

B Cresoti .....	℥ xvi
Thymol .....	gr. xvi
Spts. Camphoræ .....	℥ iss
Ol. Terebinth .....	℥ iss

M. Sig. External use.

This can be used either for spraying the pharynx and nasal cavities for 10-20 seconds every two hours, or for inhalation from a flask provided with two glass tubes. In twenty-four hours the mucous membrane will appear more normal and the false membrane will begin to loosen, evidencing an improvement which progresses steadily. This treatment does not at all preclude or interfere with the use of antiseptic gargles or lavage of the nose or throat or with internal medication.—*Malinowsky*.